



# STIC Search Report

## EIC 3700

STIC Database Tracking Number 208058

TO: Laura C Hill  
Location: RND 6B76  
Art Unit: 3761  
Friday, December 29, 2006

Case Serial Number: 10/776022

From: Ethel Leslie  
Location: EIC 3700  
RND 8A34  
Phone: 571-272-5992

Ethel.leslie@uspto.gov

### Search Notes

Laura,

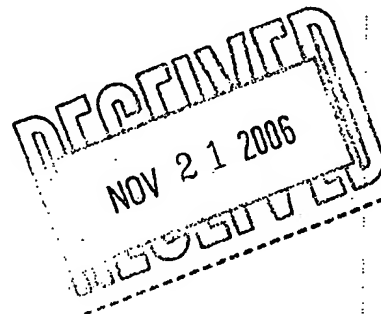
Attached is the completed search for a surgical drain with multiple sensors. I did an extensive search on the requested topic in a number of bibliographic and full-text databases. I found several items that I think might help you – they are marked with flags. Please be sure to look over all the results as there may be other items of interest. I have attached the search strategies used for the searches performed.

I hope you find this search helpful. If you have a moment, please fill out the attached STIC Feedback Form. And, if there is anything I can do to refine or revise this search, please let me know.

Sincerely,  
Ethel Leslie

P.S. Happy New Year!

From: LAURA HILL [laura.hill@uspto.gov]  
Sent: Tuesday, November 21, 2006 11:57 AM  
To: STIC-EIC3700  
Subject: Database Search Request, Serial Number: 10/776022



Requester:  
LAURA HILL (P/3761)  
Art Unit:  
GROUP ART UNIT 3761  
Employee Number:  
80706  
Office Location:  
RND 06B76  
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Case serial number:  
10/776022  
Class / Subclass(es):  
604/541  
Earliest Priority Filing Date:  
2-7-03  
Format preferred for results:  
Paper

Search Topic Information:

surgical drain with conduit implanted into body to rest against first and second tissues; first sensor to sense physiological property of first tissue (temperature, oxygenation, perfusion, NADH levels); second sensor to sense same property as first sensor but at a different location; energy delivering transmitting element for first and second tissues; third sensor detects different property than first and second sensors and located at a different third location; processing system compares differences between first, second, and third processing sensors

Special Instructions and Other Comments:

Normally in the office Monday through Friday 7:30 am-5:00 pm (off first Friday)

Set	Items	Description
S1	3087489	S SENSOR OR SENSORS OR SENSE? ? OR SENSING? OR DETECT? OR FIBEROPTIC? OR OPTICAL(3N) (FIBER? ? OR FIBRE? ?)
S2	92722	S S1(3N) (MULTIPL? OR PLURAL? OR SEVERAL OR FEW)
S3	192838	S S1(3N) (THREE OR THIRD OR TWO OR SECOND OR COUPLE OR PAIR)
S4	2902328	S MONITOR??? OR ASSESS??? OR EVALUAT? OR MEASURE? OR MEASURING OR DETERMIN?
S5	69105	S (PHYSIOLOG? OR BIOLOGY OR BIOLOGICAL) (2N) (PROPERTY? OR PROPERTIES OR DATA OR DATUM OR INFORMATION?) OR (OXYGEN OR O2) (2N) SATURAT? OR BLOOD (2N) (OXYGEN OR O2 OR SUGAR OR GLUCOSE) OR (NADH OR NAD OR NADP OR NICOTINAMIDE()ADENINE()DINUCLEOTIDE OR DRUG? ? OR PHARMACEUTIC? OR PROTHROMBIN) (2N) (LEVEL? ? OR CONCENTRAT?)
S6	4057917	S OXYGENAT? OR TEMPERATURE? OR COLOR? ? OR COLOUR? OR PRESSURE? ? OR PERFUS? OR PH OR TURGIDIT?
S7	1577132	S DRAIN? OR TUBE? ? OR TUBING? OR TUBUL? OR CATHETER? OR CANNULA? OR CONDUIT? ?
S8	8115508	S BETWEEN OR WITHIN OR INSIDE OR PROXIMAT? OR INNER OR INNERMOST OR INTERIOR? OR INTERNAL?
S9	302507	S ORGAN? ? OR TISSUE? ?
S10	405388	S LIVER OR KIDNEY OR HEART OR LUNG OR LUNGS OR WOUND? ? OR STOMACH
S11	506543	S IC=(A61B? OR A61D? OR A61F? OR A61M?)
S12	220110	S S4(5N)S5:S6
S13	39618	S S1(5N)S7
S14	51236	S S8(5N)S9:S10
S15	4	S S2:S3 (S) S12 (S) S13 (S) S14
S16	8	S S2:S3(S)S12(S)S7(S)S14
S17	4	S S16 NOT S15
S18	12	S S2:S3 AND S12 AND S13 AND S14
S19	8	S S18 NOT (S15 OR S17)
S20	33	S S2:S3 AND S12 AND S7 AND S14
S21	17	S S20 NOT (S15 OR S17 OR S19)
S22	20391	S S4(5N)S9:S10
S23	82	S S2:S3 AND S13 AND S22
S24	23	S S2:S3(S)S13(S)S22
S25	19	S S24 NOT (S15 OR S17 OR S19 OR S20)

; show files

[File 347] JAPIO Dec 1976-2006/Aug(Updated 061130)  
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[File 350] Derwent WPIX 1963-2006/UD=200682  
(c) 2006 The Thomson Corporation. All rights reserved.

\*File 350: DWPI has been enhanced to extend content and functionality of the database. For more info, visit <http://www.dialog.com/dwpi/>.

Patent  
Search  
#1

foreign/Int'l  
Patent  
Searches

Patent Number	Kind	Date		Kind	Date	Update	Type
WO 2001013792	A1	20010301	WO 2000IL498	A	20000817	200131	B
AU 200067216	A	20010319	AU 200067216	A	20000817	200136	E
US 6360123	B1	20020319	US 1999382269	A	19990824	200224	E

Priority Applications (no., kind, date): US 1999382269 A 19990824

## Patent Details



Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2001013792	A1	EN	40	6		
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
AU 200067216	A	EN			Based on OPI patent	WO 2001013792

#### Alerting Abstract WO A1

**NOVELTY** - The electrical impedance between two electrodes (22B,22C) is determined to obtain an impedance signal correlated with the mechanical property of a human organ. The electrodes form part of an intra-vessel impedance sensor (22) that is positioned within a blood vessel (16) that is mechanically coupled to a human organ (18). The electrodes are connected to an impedance determining unit (14).

**DESCRIPTION** - INDEPENDENT CLAIMS are also included for the following:

- B. a mechanical property determining device for human organ;
- C. and a determining method for intra-vessel impedance signal in blood vessel mechanically coupled to a human organ.

**USE** - For obtaining various mechanical properties and physiological parameters from different human organs or body parts e.g. heart through impedance measurements.

**ADVANTAGE** - Obtains an impedance signal which can be fully correlated to the mechanical **property** or a **physiological** parameter which one seeks to **determine**.

**DESCRIPTION OF DRAWINGS** - The figure shows a schematic diagram illustrating a device for determining a mechanical property for human organ.

14 Impedance determining unit

16 Blood vessel

18 Human organ

22 Intra-vessel impedance sensor

22B,22C Electrodes

**Title Terms /Index Terms/Additional Words:** MECHANICAL; PROPERTIES; MEASURE; DETERMINE; IMPEDANCE; TWO; ELECTRODE; SET; BLOOD; VESSEL; CONNECT; HUMAN; ORGAN; OBTAIN; SIGNAL; CORRELATE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/05			Main		"Version 7"

US Classification, Issued: 600547000, 600588000, 324600000, 324605000, 324606000, 324609000, 324691000, 324692000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-E02D; S03-E14H; S05-D01D1

19/5/5 (Item 5 from file: 350) Links

Derwent WPIX

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0007054170 *Drawing available*

WPI Acc no: 1995-074964/199510

Related WPI Acc No: 1996-151080; 1997-372548; 1997-372550; 1997-372649; 1997-402254; 1997-424685; 1997-424686; 1997-424689; 1997-424691; 1997-424704; 1997-424706; 1997-424713; 1997-424714; 1998-018249; 1998-130447; 1998-207172; 1998-207173; 1998-207174; 1998-207175; 1998-207176; 1998-217003; 1998-387709; 1998-387710; 1998-398736; 1999-142523; 1999-478971; 1999-492592; 2002-414844; 2003-197790; 2003-688805; 2003-747933; 2005-047850

XRPX Acc No: N1995-059430

**Organ or bodily structure mapping method for treatment of cardiac arrhythmias - advancing distal tip of catheter to arrhythmia site and sensing tip location with non-ionising field to superimpose data points on perspective map**

Patent Assignee: BIOSENSE INC (BIOS-N); BIOSENSE WEBSTER INC (BIOS-N)

Inventor: BEN-HAIM S

Patent Family ( 18 patents, 42 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1995002995	A1	19950202	WO 1994US8352	A	19940720	199510	B
US 5391199	A	19950221	US 199394539	A	19930720	199513	E
AU 199473723	A	19950220	AU 199473723	A	19940720	199521	E
US 5443489	A	19950822	US 199394539	A	19930720	199539	E
			US 1994311596	A	19940923		
EP 679068	A1	19951102	EP 1994922710	A	19940720	199548	E
			WO 1994US8352	A	19940720		
US 5480422	A	19960102	US 199394539	A	19930720	199607	E
			US 1994311594	A	19940923		
US 5546951	A	19960820	US 199394539	A	19930720	199639	E
			US 1994311593	A	19940923		
JP 8504653	W	19960521	WO 1994US8352	A	19940720	199646	E
			JP 1995505369	A	19940720		
US 5568809	A	19961029	US 199394539	A	19930720	199649	E
			US 1994311598	A	19940923		
			US 1995490122	A	19950712		

US 5694945	A	19971209	US 199394539	A	19930720	199804	E
			US 1994311598	A	19940923		
			US 1995490122	A	19950712		
			US 1995551905	A	19951023		
US 5713946	A	19980203	US 199394539	A	19930720	199812	E
			US 1994311598	A	19940923		
			US 1995490122	A	19950712		
			US 1996738896	A	19961028		
AU 692789	B	19980618	AU 199473723	A	19940720	199835	E
US 5840025	A	19981124	US 199394539	A	19930720	199903	E
			US 1994311598	A	19940923		
			US 1995490122	A	19950712		
			US 1996738896	A	19961028		
			US 1997975234	A	19971121		
CA 2144946	C	20040323	CA 2144946	A	19940720	200422	E
			WO 1994US8352	A	19940720		
EP 679068	B1	20050316	EP 1994922710	A	19940720	200522	E
			WO 1994US8352	A	19940720		
DE 69434296	E	20050421	DE 69434296	A	19940720	200528	E
			EP 1994922710	A	19940720		
			WO 1994US8352	A	19940720		
ES 2240964	T3	20051016	EP 1994922710	A	19940720	200571	E
DE 69434296	T2	20060608	DE 69434296	A	19940720	200638	E
			EP 1994922710	A	19940720		
			WO 1994US8352	A	19940720		

Priority Applications (no., kind, date): US 1997975234 A 19971121; US 1996738896 A 19961028; US 1995551905 A 19951023; US 1995490122 A 19950712; US 1994311598 A 19940923; US 1994311596 A 19940923; US 1994311594 A 19940923; US 1994311593 A 19940923; US 199394539 A 19930720

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1995002995	A1	EN	45	10		
National Designated States, Original	AT AU BB BG BR CA CH CN CZ DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA					
Regional Designated States, Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE					
US 5391199	A	EN	20	10		
AU 199473723	A	EN			Based on OPI patent	WO 1995002995
US 5443489	A	EN	21	10	Division of application	US 199394539

					Division of patent	US 5391199
EP 679068	A1	EN	1	1	PCT Application	WO 1994US8352
					Based on OPI patent	WO 1995002995
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE					
US 5480422	A	EN	20	10	Continuation of application	US 199394539
					Continuation of patent	US 5391199
US 5546951	A	EN	20	10	Division of application	US 199394539
					Division of patent	US 5391199
JP 8504653	W	JA	38		PCT Application	WO 1994US8352
					Based on OPI patent	WO 1995002995
US 5568809	A	EN	21	10	Division of application	US 199394539
					Continuation of application	US 1994311598
					Division of patent	US 5391199
US 5694945	A	EN	17	10	Division of application	US 199394539
					Continuation of application	US 1994311598
					Continuation of application	US 1995490122
					Division of patent	US 5391199
					Continuation of patent	US 5568809
US 5713946	A	EN	19	10	Division of application	US 199394539
					Continuation of application	US 1994311598
					Continuation of application	US 1995490122
					Division of patent	US 5391199
					Continuation of patent	US 5568809
AU 692789	B	EN			Previously issued patent	AU 9473723
					Based on OPI patent	WO 1995002995
US 5840025	A	EN			Division of application	US 199394539
					Continuation of application	US 1994311598
					Continuation of application	US 1995490122
					Continuation of application	US 1996738896
					Division of patent	US 5391199
					Continuation of patent	US 5568809
					Continuation of patent	US 5713946
CA 2144946	C	EN			PCT Application	WO 1994US8352
					Based on OPI patent	WO 1995002995
EP 679068	B1	EN			PCT Application	WO 1994US8352
					Based on OPI patent	WO 1995002995
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE					
DE 69434296	E	DE			Application	EP 1994922710
					PCT Application	WO 1994US8352

				Based on OPI patent	EP 679068
				Based on OPI patent	WO 1995002995
ES 2240964	T3	ES		Application	EP 1994922710
				Based on OPI patent	EP 679068
DE 69434296	T2	DE		Application	EP 1994922710
				PCT Application	WO 1994US8352
				Based on OPI patent	EP 679068
				Based on OPI patent	WO 1995002995

#### Alerting Abstract WO A1

The method involves obtaining a perspective image of the organ or structure to be mapped. One or more catheters with distal tips are advanced to sites adjacent or **within** the **organ** or structure. The location of the distal tip of each **catheter** is **sensed** using a non-ionizing field.

The sensed information is processed to create one or more data points. The data points are superimposed onto the perspective image. The distal tip of the **catheter(s)** may be used to **sense** local information. A portion of the organ or structure may also be ablated.

USE/ADVANTAGE - Treating cardiac arrhythmia e.g ventricular tachycardia by rapid identification of active site to be ablated. Provides trackable mapping/ablation catheter esp. for treatment of cardiac arrhythmias. Utilises non-ionizing field thereby limiting radiation exposure for both patient and physician.

**Title Terms /Index Terms/Additional Words:** ORGAN; BODY; STRUCTURE; MAP; METHOD; TREAT; CARDIAC; ARRHYTHMIC; ADVANCE; DISTAL; TIP; CATHETER; SITE; SENSE; LOCATE; NON; IONISE; FIELD; SUPERIMPOSED; DATA; POINT; PERSPECTIVE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; A61B-005/04; A61B-005/0402; A61B-005/06; A61B-008/12; A61M-025/095; A61M-029/825; A61N-001/18			Main		"Version 7"
A61B-001/04; A61B-017/00; A61B-017/36; A61B-017/39; A61B-018/00			Secondary		"Version 7"
A61B-0018/00	A	I	L	B	20060101
A61B-0005/06	A	I	F	B	20060101

US Classification, Issued: 607122000, 607115000, 607122000, 128642000, 607122000, 128660030, 128702000, 607122000, 128656000, 128736000, 128642000, 607122000, 600424000

File Segment: EngPI; EPI;

DWPI Class: S05; P31; P34

Manual Codes (EPI/S-X): S05-B03; S05-D01A1

19/5/6 (Item 6 from file: 350) [Links](#)

Derwent WPIX

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0006941506 *Drawing available*

WPI Acc no: 1994-340512/

XPX Acc No: N1994-267106

**Optical blood oxygen saturation probe for inserting into oesophagus - has temp sensing device e.g. thermistor or thermocouple for detecting internal temp of patient and heart and respiration sound sensing device**

Patent Assignee: RESPIRATORY SUPPORT PROD INC (RESP-N)

Inventor: BERAN A V; SHIGEZAWA G

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5357954	A	19941025	US 199391	A	19930104	199442	B

Priority Applications (no., kind, date): US 199391 A 19930104

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 5357954	A	EN	8	5	

**Alerting Abstract US A**

A blood oxygen saturation sensor or oximeter is mounted to a probe for insertion into the oesophagus of a patient. The sensor includes a set of optical transmission elements and an optical detector for optically detecting the blood oxygen saturation of tissues of the oesophagus. By mounting the blood oxygen saturation sensor to a probe for insertion into the oesophagus, **blood oxygen saturation measurements** are obtainable at a physiologically stable site which is fully isolated from ambient light external to the patient.

The probe oesophagus may additionally be provided with a heart and respiration sound sensor and a temp sensor. With such a combination, a single probe provides the **detection of several** useful physiological parameters, including temp, heart, and respiration sounds and blood oxygen saturation levels.

USE/ADVANTAGE - Reliably and inexpensively constructed of few components and is ideally suited for one-time use.

**Title Terms /Index Terms/Additional Words:** OPTICAL; BLOOD; OXYGEN; SATURATE; PROBE; INSERT; OESOPHAGUS; TEMPERATURE; SENSE; DEVICE; THERMISTOR; THERMOCOUPLE; DETECT; INTERNAL; PATIENT; HEART; RESPIRATION; SOUND

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"

US Classification, Issued: 128634000, 128736000, 128715000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-E04A4; S03-E14H1; S05-D01G

19/5/7 (Item 7 from file: 350) [Links](#)

Derwent WPIX

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0006919306 *Drawing available*

WPI Acc no: 1994-315550/

XRPX Acc No: N1994-247818

**Optical fibre pressure sensing catheter for detecting discrete pressure within organ e.g oesophagus - includes positioning assembly disposed within lumen adjacent discrete sensing area of wall for positioning sensing portion of sensing optical fibre in sensing position**

Patent Assignee: UNIV OKLAHOMA STATE (OKLA)

Inventor: DUKE J C; HARRIS S L; LEWELLING K R; SLUSS J J

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5348019	A	19940920	US 1992947209	A	19920918	199439	B

Priority Applications (no., kind, date): US 1992947209 A 19920918

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 5348019	A	EN	15	13	

#### Alerting Abstract US A

The catheter comprises an elongated hollow body having a wall, a closed proximal end, a closed distal end, and a lumen between them. The wall is generally non-compressible by pressure normally exerted upon it by the **organ within** which the catheter is inserted except for at least one discrete sensing area of the wall having sufficient flexibility so as to be compressible by pressure exerted thereupon by the **organ within** which the catheter is inserted. The **catheter** further comprises at least one **sensing** optical fiber disposed within the lumen. The optical fiber further comprises a pressure sensing device which is a portion of the optical fiber adjacent the discrete sensing area of the wall. The sensing portion is deformable in response to compression of the discrete sensing area of the wall, which deformation causes attenuation of light transmitted through the fiber.

The **catheter** may further comprise a reference **optical fiber** disposed within the lumen of the body for use as a comparator with the **sensing optical fiber**. The **catheter** may further comprise a positioning assembly disposed within the lumen adjacent the discrete sensing area of the wall for positioning the sensing portion of the sensing **optical fiber** in a **sensing** position. The **catheter** may comprise a number of **optical fibers** and a number of discrete sensing areas.

USE/ADVANTAGE - E.g for evaluating dysfunctions of gastrointestinal tract by measuring motility of various portions of alimentary and gastrointestinal tract. Catheter has electroisolation, circumferential **pressure measurement** abilities, sphincter **measurement** capabilities, more **pressure** points, and it does not require patient to lie supine or hold oesophagus level.

**Title Terms /Index Terms/Additional Words:** OPTICAL; FIBRE; PRESSURE; SENSE; CATHETER; DETECT; DISCRETE; ORGAN; OESOPHAGUS; POSITION; ASSEMBLE; DISPOSABLE; LUMEN; ADJACENT; AREA; WALL; PORTION

**Class Codes**

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/02			Main		"Version 7"

US Classification, Issued: 128667000, 128675000, 073705000, 073862624

File Segment: EngPI; EPI;  
 DWPI Class: S02; S05; V07; P31  
 Manual Codes (EPI/S-X): S02-F04J; S02-K03B1; S05-D09; V07-K01; V07-N

?



21/5/2 (Item 2 from file: 350) [Links](#)

Derwent WPIX

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0015628783 *Drawing available*

WPI Acc no: 2006-192960/200620

Related WPI Acc No: 2004-141556

XRPX Acc No: N2006-166231

**Subject condition monitoring device, e.g. for tumor diagnosis, has bandage type or implantable type support element in body of patient, and associated with sensor including temperature/impedance sensor, for monitoring tissue of patient**

Patent Assignee: BLOOM M (BLOO-I); HEINRICHS W L (HEIN-I); KOVACS G T A (KOVA-I); SALZBERG D (SALZ-I)

Inventor: BLOOM M; HEINRICHS W L; KOVACS G T A; SALZBERG D

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20060047218	A1	20060302	US 2002125051	A	20020417	200620	B
			US 2005260521	A	20051026		

Priority Applications (no., kind, date): US 2002125051 A 20020417; US 2005260521 A 20051026

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20060047218	A1	EN	17	6	Continuation of application	US 2002125051
					Continuation of patent	US 6963772

**Alerting Abstract US A1**

**NOVELTY** - Subject condition monitoring device has bandage type or implantable type support element in body of patient and associated with sensors, for monitoring tissue of body of patient. The sensor includes temperature sensor for detecting temperature **between** areas of **tissue** of patient and impedance sensor for detecting subcutaneous fluid in the patient.

**DESCRIPTION** - An **INDEPENDENT CLAIM** is also included for a subject condition monitoring system.

**USE** - For **monitoring** patient retainable **temperature** and impedance, for diagnosis of tumor, benign neoplasms, infection and inflammation, in medical application.

**ADVANTAGE** - The novel method allows constant or periodic **monitoring of temperature** and impedance of patient, by holding the sensor in close with the patient for extended period of time through the use of easily retainable support element.

**DESCRIPTION OF DRAWINGS** - The figure shows above subject condition monitoring device.

10 sensor probe

38 sensor placement location

56 shunt

74 patients aorta

76 pulmonary vein

78 recharge packet

84 skin of patient

**Title Terms /Index Terms/Additional Words:** SUBJECT; CONDITION; MONITOR; DEVICE; TUMOUR; DIAGNOSE; BANDAGE; TYPE; IMPLANT; SUPPORT; ELEMENT ; BODY; PATIENT; ASSOCIATE; SENSE; TEMPERATURE; IMPEDANCE; TISSUE

**Class Codes**

**International Patent Classification**

IPC	Class Level	Scope	Position	Status	Version Date
A61B-0005/00	A	I	L	B	20060101
A61B-0005/05	A	I	F	B	20060101

US Classification, Issued: 600547000, 600549000, 128903000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-B01E9; S03-E02D; S05-D01D1; S05-D01E

21/5/3 (Item 3 from file: 350) [Links](#)

Derwent WPIX

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0015501758 *Drawing available*

WPI Acc no: 2006-065896/200607

XRPX Acc No: N2006-057268

**Tissue cryoablation device for treating patient, has pressure sensors for measuring pressures in supply and return line, which is use with both line dimensions to estimate chamber pressure and to allow expansion of refrigerant**

Patent Assignee: CRYOCOR INC (CRYO-N); LENTZ D J (LENT-I); RYBA E (RYBA-I)

Inventor: LENTZ D J; RYBA E

**Patent Family ( 2 patents, 108 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20050288657	A1	20051229	US 2004880233	A	20040629	200607	B
WO 2006006986	A2	20060119	WO 2005US12664	A	20050415	200607	E

Priority Applications (no., kind, date): US 2004880233 A 20040629

**Patent Details**

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 20050288657	A1	EN	6	3	

WO 2006006986	A2	EN				
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
Regional Designated States, Original	AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					

#### Alerting Abstract US A1

**NOVELTY** - The device has a **pressure monitoring** system with **pressure** sensors (52, 54) positioned in supply and return lines, respectively for **measuring pressure** in the lines. The sensors are positioned to remain at extracorporeal locations throughout a cryoablation procedure. The **measured pressures** are used with supply and return line dimensions to estimate the chamber pressure and to allow expansion of refrigerant in the chamber.

**DESCRIPTION** - INDEPENDENT CLAIMS are also included for the following:

- a system for **monitoring pressure** in an expansion chamber of a cryoablation **catheter**
- a method of cryoablating tissue at a treatment site in the vasculature of a patient.

**USE** - Used for non-invasive cryoablation of **tissue within** the vasculature e.g. veins, arteries and chambers of heart of a patient, for treating a patient suffering from atrial fibrillation.

**ADVANTAGE** - The device facilitates to **measure the pressure** within the expansion chamber without the requirement of reduction in the size of the chamber or an increase in the size of **catheter** tip. The device is easy to use, relatively simple to implement, and comparatively cost effective.

**DESCRIPTION OF DRAWINGS** - The drawing shows a cross-sectional view of a portion of a tissue cryoablation device

10 Tissue cryoablation device

14 Operative surface

16 Catheter tube

50 Proximal end

52, 54 Pressure sensors

**Title Terms /Index Terms/Additional Words:** TISSUE; DEVICE; TREAT ; PATIENT; PRESSURE; SENSE; MEASURE; SUPPLY; RETURN; LINE; DIMENSION; ESTIMATE; CHAMBER; ALLOW; EXPAND; REFRIGERATE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/02			Main		"Version 7"
A61B-0018/02	A	I	F	B	20060101

A61B-0018/00	C	I	F	B	20060101
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US Classification, Issued: 606021000, 606023000

File Segment: EngPI; EPI;

DWPI Class: S02; S05; P31

Manual Codes (EPI/S-X): S02-F04; S05-B04A; S05-B06

21/5/4 (Item 4 from file: 350) [Links](#)

Derwent WPIX

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0014996461 *Drawing available*

WPI Acc no: 2005-344345/200535

XRPX Acc No: N2005-281305

**Multiple electrode lead system for implantable multi-chamber cardiac medical device, has electrodes used for left ventricular pacing, sensing of ventricular electrogram signals and monitoring intrathoracic impedance**

Patent Assignee: HINE D S (HINE-I); MANDA V (MAND-I); MEDTRONIC INC (MEDT); SOMMER J L (SOMM-I)

Inventor: HINE D S; MANDA V; SOMMER J L

Patent Family ( 3 patents, 106 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20050090870	A1	20050428	US 2003692647	A	20031024	200535	B
WO 2005039690	A1	20050506	WO 2004US34677	A	20041021	200535	E
US 7142919	B2	20061128	US 2003692647	A	20031024	200680	E

Priority Applications (no., kind, date): US 2003692647 A 20031024

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 20050090870	A1	EN	37	15	
WO 2005039690	A1	EN			
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW				
Regional Designated	AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM				

States,Original

GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE  
SI SK SL SZ TR TZ UG ZM ZW

### Alerting Abstract US A1

**NOVELTY** - The system has an implantable pulse generator operatively coupled to a proximal portion of an elongated medical electrical lead. The generator has a pressure sensor to sense cardiac events. Electrodes are used for left ventricular (LV) pacing, sensing of LV electrogram (EGM) signals and **monitoring** intrathoracic impedance. The **pressure** sensor provides an output signal related to mechanical cardiac performance.

**DESCRIPTION** - INDEPENDENT CLAIMS are also included for the following:

- c. a method of reconfiguring electrical communication among three electrode pairs coupled to a portion of a reconfigurable medical electrical lead
- d. a computer readable medium for storing executable instructions to perform a method of reconfiguring electrical communication among three electrode pairs coupled to a portion of a reconfigurable medical electrical lead.

**USE** - Used for an implantable multi-chamber cardiac medical device to sense cardiac events, measure intrathoracic impedance and deliver diverse electrical stimulation therapy.

**ADVANTAGE** - The electrodes delivering therapy to or near the region of the myocardial infarct (MI) can be rerouted to effectively deliver therapy, while avoiding the MI-affected region of the heart. The system is compact and convenient to perform a localized, study of dispersion of depolarization and repolarization wave- fronts **within** cardiac tissue.

**DESCRIPTION OF DRAWINGS** - The drawing shows a flow chart of a method of monitoring cardiac activity based on sensing left ventricular (LV) lateral wall acceleration.

**Title Terms /Index Terms/Additional Words:** MULTIPLE; ELECTRODE; LEAD; SYSTEM; IMPLANT; MULTI; CHAMBER; CARDIAC; MEDICAL; DEVICE; LEFT; VENTRICLE; PACE; SENSE; ELECTROGRAM; SIGNAL; MONITOR; IMPEDANCE

### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-0005/042	A	I		R	20060101
A61B-0005/0464	A	I		R	20060101
A61N-0001/05	A	I		R	20060101
A61N-0001/365	A	I		R	20060101
A61N-0001/18	A	I	F	B	20060101
A61B-0005/0408	C	I		R	20060101
A61B-0005/0452	C	I		R	20060101
A61N-0001/05	C	I		R	20060101
A61N-0001/365	C	I		R	20060101

US Classification, Issued: 607017000, 607017000

15/5/1 (Item 1 from file: 350) [Links](#)

Derwent WPIX

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0015067831 *Drawing available*

WPI Acc no: 2005-417067/200542

XRAM Acc no: C2005-127738

XRPX Acc No: N2005-338315

**Pulmonary artery catheter for detecting oxygen consumption in the heart, includes thermistor, two oxygen sensors positioned within patient's pulmonary artery and right atrium or superior vena cava, and microprocessor**

Patent Assignee: GUTIERREZ G (GUTI-I)

Inventor: GUTIERREZ G

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20050124872	A1	20050609	US 2003520280	P	20031114	200542	B
			US 2004987505	A	20041112		

Priority Applications (no., kind, date): US 2003520280 P 20031114; US 2004987505 A 20041112

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20050124872	A1	EN	8	6	Related to Provisional	US 2003520280

**Alerting Abstract US A1**

**NOVELTY** - Pulmonary artery catheter includes thermistor for measuring blood temperatures and determining cardiac output, a first oxygen sensor (48) positioned within a patient's pulmonary artery (22), a second oxygen sensor (52) positioned within a patient's right atrium (46) or superior vena cava, and a microprocessor coupled to the sensors and calculates rate of oxygen consumption in the heart.

**DESCRIPTION** - Pulmonary artery catheter comprises an elongated flexible tube (24) having an inflatable balloon (28) at a distal end (32), and a syringe positioned at a proximal end of the tube. The syringe allows operator to inflate the balloon to allow the catheter to be pulled through the patient's venous system. A thermistor is proximal to the balloon, measures blood temperatures, and determines cardiac output. A first oxygen sensor is adjacent to the distal end of the tube. It is positioned within a patient's pulmonary artery. A second oxygen sensor is positioned proximal to the first oxygen sensor. It is positioned within a patient's right atrium or superior vena cava. The two sensors comprise a series of light emitting diodes and a photodetector. They determine blood oxygen content by measuring the blood's absorption of infrared light. A microprocessor is coupled to the two sensors. It implements an algorithm so that the rate of oxygen consumption in the heart is calculated as a function of the difference between blood oxygen content as measured by the two oxygen sensors and the cardiac output as determined by the thermistor.

An **INDEPENDENT CLAIM** is also included for a system for determining myocardial oxygen consumption of the heart comprising the two oxygen sensors positioned within the respective heart's pulmonary artery and heart's right atrium or superior vena cava, and the microprocessor.

**USE** - The catheter is used in detecting rate of oxygen consumption in the heart by comparing oxygen levels in the

pulmonary artery to oxygen levels in the right atrium or superior vena cava (claimed). It is used for patient diagnosis and hemodynamic and therapeutic monitoring.

**ADVANTAGE** - The inventive catheter is capable of detecting myocardial metabolism via the differential measurement of oxygen consumption in the atrial and mixed venous blood.

**DESCRIPTION OF DRAWINGS** - The figure is a partial cross sectional view of the catheter positioned within the right atrium and pulmonary artery of the human heart.

22 Pulmonary artery

24 Flexible tube

28 Balloon

32 Distal end

46 Right atrium

48 First oxygen sensor

52 Second oxygen sensor

**Title Terms /Index Terms/Additional Words:** PULMONARY; ARTERY; CATHETER; DETECT; OXYGEN; CONSUME; HEART; THERMISTOR; TWO; SENSE; POSITION; PATIENT; RIGHT; ATRIUM; SUPERIOR; VENA; CAVA; MICROPROCESSOR

### Class Codes

#### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"
A61B-005/02			Secondary		"Version 7"

US Classification, Issued: 600325000, 600549000, 600316000

File Segment: CPI; EngPI; EPI

DWPI Class: B04; S03; S05; T01; P31

Manual Codes (EPI/S-X): S03-B01F; S03-E04A5B; S03-E04A5L; S05-D01B1B; S05-D01G; T01-J06A; T01-S01C

Manual Codes (CPI/A-N): B04-B04D; B11-C04B; B11-C08; B12-K04

15/5/4 (Item 4 from file: 350) [Links](#)

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0008953938 *Drawing available*

WPI Acc no: 1998-506438/199843

XRPX Acc No: N1998-394794

**System for ablating tissue within body using tissue via blood vessels of body - couples sensor to catheter and to energy source and degree to which electrode contacts heart tissue is determined**

Patent Assignee: MEDTRONIC INC (MEDT)

Inventor: WITTKAMPF F H M

**Patent Family ( 4 patents, 20 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1998040023	A1	19980917	WO 1998US4172	A	19980304	199843	B
EP 967924	A1	20000105	EP 1998907712	A	19980304	200006	E
			WO 1998US4172	A	19980304		
US 6063078	A	20000516	US 1997815819	A	19970312	200031	E
JP 2001514557	W	20010911	JP 1998539618	A	19980304	200167	E
			WO 1998US4172	A	19980304		

Priority Applications (no., kind, date): US 1997815819 A 19970312

**Patent Details**

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1998040023	A1	EN	38	13		
National Designated States,Original	JP					
Regional Designated States,Original	AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
EP 967924	A1	EN			PCT Application	WO 1998US4172
					Based on OPI patent	WO 1998040023
Regional Designated States,Original	CH DE FR LI NL SE					
JP 2001514557	W	JA	35		PCT Application	WO 1998US4172
					Based on OPI patent	WO 1998040023

**Alerting Abstract WO A1**

The system ablates tissue within a body by accessing the body tissue through the blood vessels of the body and comprises an energy source providing a level of energy which is non damaging to the cellular structures of the body tissue. A catheter has an electrode and is coupled to the energy source.

The temperature of the electrode is sensed while also sensing the amount of energy which is non damaging to the cellular structures of the body tissues is delivered to the electrode. The sensor is coupled to the catheter and coupled to the energy source and the degree to which the electrode contacts the heart tissue is determined, for example, no contact, moderate, good or excellent contact.

USE - Relates to field of devices for cardiac surgery and to devices for RF ablation of cardiac tissue.

ADVANTAGE - Permits electrode tissue contact to be reliably indicated.

**Title Terms /Index Terms/Additional Words:** SYSTEM; ABLATE; TISSUE; BODY; BLOOD; VESSEL; COUPLE; SENSE; CATHETER; ENERGY; SOURCE; DEGREE; ELECTRODE; CONTACT; HEART; DETERMINE

**Class Codes**

International Patent Classification



IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/39; A61B-018/12; A61B-018/18			Main		"Version 7"
A61B-018/00			Secondary		"Version 7"

US Classification, Issued: 606041000, 606049000, 607102000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B03; S05-B05

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17/5/1 (Item 1 from file: 350) [Links](#)

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0013204640 *Drawing available*

WPI Acc no: 2003-288899/

Related WPI Acc No: 2003-089764

XRPX Acc No: N2003-229726

**Cryotreatment system for ablating tumorous tissue, has thermocouples provided in contact monitor lead extending through elongated portion to cooling chamber, for sensing temperature of contact tissue**

Patent Assignee: CARROLL S (CARR-I); CRYOCATH TECHNOLOGIES INC (CRYO-N) ; KLEIN G (KLEI-I)

Inventor: ABOUD M; ARLESS S G; CARROLL S; KLEIN G; MILDER F L; WITTENBERGER D

Patent Family ( 2 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20030009160	A1	20030109	US 1999393461	A	19990910	200328	B
			US 2002237376	A	20020909		
US 6730077	B2	20040504	US 2002237376	A	20020909	200430	E

Priority Applications (no., kind, date): US 1999393461 A 19990910; US 2002237376 A 20020909

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20030009160	A1	EN	9	4	Continuation of application	US 1999393461
					Continuation of patent	US 6471693

**Alerting Abstract US A1**

**NOVELTY** - A catheter (110) has an elongated portion (110b) and a tip (110c) having a cooling chamber (3) through which cooling fluid passes to cool a treatment wall (7) in contact with body tissue. A contact monitor lead extending through the elongated portion to the cooling chamber, has thermocouples (5a,5b) which provide signals indicative of temperature of the tissue to a monitor.

**USE** - For treatment of cardiac arrhythmia conduction tissue site and for ablating tumorous, diseased, precancerous or congenitally abnormal tissue in various vessel or organ systems.

**ADVANTAGE** - Enables exact monitoring of the predetermined tissue site and a more effective cooling of the tissue.

**DESCRIPTION OF DRAWINGS** - The figure shows the cryotreatment system.

3cooling chamber

5a,5bthermocouples

7treatment wall

110catheter

110belongated portion

110ctip

**Title Terms /Index Terms/Additional Words:** SYSTEM; ABLATE; TUMOUR; TISSUE; THERMOCOUPLE; CONTACT; MONITOR; LEAD; EXTEND; THROUGH; ELONGATE; PORTION; COOLING; CHAMBER;

SENSE; TEMPERATURE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/02			Main		"Version 7"

US Classification, Issued: 606021000, 606023000, 606021000, 606023000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-B01A; S05-B05; S05-B06; S05-D01E

17/5/2 (Item 2 from file: 350) [Links](#)

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0013011493 *Drawing available*

WPI Acc no: 2003-089764/

Related WPI Acc No: 2003-288899

XRPX Acc No: N2003-070795

**Cryotreatment system for destructing tissues, has controller that indicates tissue contact in response to contact monitor lead that extends through elongated housing of cryotreatment unit to each portion of outer shell**

Patent Assignee: CRYOCATH TECHNOLOGIES INC (CRYO-N)

Inventor: CARROLL S; KLEIN G

##### Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6471693	B1	20021029	US 1999393461	A	19990910	200308	B

Priority Applications (no., kind, date): US 1999393461 A 19990910

##### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 6471693	B1	EN	8	4	

#### Alerting Abstract US B1

NOVELTY - A cooling region has an interior through which the cooling fluid passes to cool its outer shell. The outer shell has a contact monitor lead extending through an elongated housing of a cryotreatment unit, to each portion of the outer shell for developing signal which indicates the tissue contact. A controller indicates the tissue

contact in response to the contact monitor lead.

**DESCRIPTION** - An INDEPENDENT CLAIM is included for cryotreatment probe system.

**USE** - For destruction of tissues of ablation of tumorous, diseased, precancerous or congenitally abnormal tissues in various vessel or organ system.

**ADVANTAGE** - Since the portion of the catheter that has contacted body tissue are cooled, the tissue contacts are controlled effectively.

**DESCRIPTION OF DRAWINGS** - The figure shows an illustrative view of the cryoablation catheter.

**Title Terms /Index Terms/Additional Words:** SYSTEM; DESTROY; TISSUE; CONTROL; INDICATE; CONTACT; RESPOND; MONITOR; LEAD; EXTEND; THROUGH ; ELONGATE; HOUSING; UNIT; PORTION; OUTER; SHELL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/02			Main		"Version 7"

US Classification, Issued: 606021000, 606023000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B06

17/5/4 (Item 4 from file: 350) [Links](#)

Derwent WPIX

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0007974428

WPI Acc no: 1997-065217/

Related WPI Acc No: 1993-045147; 1996-151051

XRAM Acc no: C1997-021441

XRFX Acc No: N1997-053675

**Organ perfusion device, esp. for computer-controlled cryoprotective treatment - permits cryo-protectant concn. control in the perfusate, in-line sensing of concn., pH and perfusate temp.**

Patent Assignee: AMERICAN NAT RED CROSS (AMNA-N)

Inventor: FAHY G; FAHY G M

##### Patent Family ( 4 patents, 23 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1996041525	A2	19961227	WO 1996US9326	A	19960604	199706	B
AU 199662588	A	19970109	AU 199662588	A	19960604	199717	E
WO 1996041525	A3	19970501	WO 1996US9326	A	19960604	199732	E
US 5856081	A	19990105	US 1991725054	A	19910708	199909	E

			US 199329432	A	19930310		
			US 1995375469	A	19950119		
			US 1995478529	A	19950607		

Priority Applications (no., kind, date): US 1995375469 A 19950119; US 199329432 A 19930310; US 1991725054 A 19910708; US 1995478529 A 19950607

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1996041525	A2	EN	64	0		
National Designated States,Original	AU CA CN JP KR SG					
Regional Designated States,Original	AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
AU 199662588	A	EN			Based on OPI patent	WO 1996041525
WO 1996041525	A3	EN				
US 5856081	A	EN			Division of application	US 1991725054
					Continuation of application	US 199329432
					C-I-P of application	US 1995375469
					Division of patent	US 5217860
					C-I-P of patent	US 5472876

#### Alerting Abstract WO A2

An organ perfusion device, comprises (i) a first fluid conduit connecting a source of perfusate to a first pump; (ii) a second fluid conduit connecting the first pump to an organ; (iii) a regulator to regulate pressure in the second conduit; and (iv) a regulator to regulate the flow rate of the perfusate through the second conduit. The pump has a speed that may provide either constant perfusion pressure or constant flow rate that allows the organ perfusion pressure to vary.

The device may perfuse a number of individual organs simultaneously by using a number of first pumps equal to the number of organs, connected to the perfusate source.

Also claimed is a computer controlled perfusion appts., and an appts. for equilibrating organs with vitrifiable concs. of cryoprotectant.

USE - Used for introducing and removing vitrifiable concs. of cryoprotective agents into and from isolated biological tissues or organs for preservation and subsequent use.

ADVANTAGE - Concn. of cryoprotectant, fluid or drug in the organ perfusate can be widely controlled independently of the perfusate flow rate. Concs. of other drugs or osmotic agents can be varied simultaneously. Concs. can effectively be brought to zero. In-line sensing of concn., pH, perfusate temp. and other parameters is possible. Differences between monitored cryoprotectant concn., its concn. in the organ and its concn. in the perfusate reservoirs are minimised. The arterio-venous difference in cryoprotectant concn. across the organ can be monitored. The organ temp. can be controlled independently of the flow rate. There is protection against perfusion of unmixed soln. and air into the organ. Perfusion pressure and/or organ flow can be controlled. Cryoprotective agents can be introduced in stages. An organ can be cooled to near to its glass transition temp. when ready to be banked. Organs of widely differing sizes can be cryoprotected and tissues can be superfused.

**Title Terms /Index Terms/Additional Words:** ORGAN; PERFUSION; DEVICE; COMPUTER; CONTROL; CRYOPROTECTIVE; TREAT; PERMIT; CRYO; PROTECT; CONCENTRATE; IN-LINE; SENSE; PH; TEMPERATURE

**Class Codes**

**International Patent Classification**

<b>IPC</b>	<b>Class Level</b>	<b>Scope</b>	<b>Position</b>	<b>Status</b>	<b>Version Date</b>
A01N-001/02			Main		"Version 7"

US Classification, Issued: 435001200, 435001300, 435284100

File Segment: CPI; EPI

DWPI Class: D22; S05; T01

Manual Codes (EPI/S-X): S05-G02; T01-J06A; T01-J08

Manual Codes (CPI/A-N): D09-A02

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19/5/1 (Item 1 from file: 350) [Links](#)

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0014470376 *Drawing available*

WPI Acc no: 2004-661834/200464

Related WPI Acc No: 2004-642220

XRAM Acc no: C2004-236285

XRPX Acc No: N2004-524052

**Monitoring system for monitoring tissue condition, e.g. temperature, has sensing systems for sensing physiological property of tissue proximate to respective surfaces of housing implanted within body**

Patent Assignee: UNIV SOUTHERN CALIFORNIA MANN INST BIOME (UYSC-N)

Inventor: JABBOUR N; NECOLA S R E; SHEHADA R E N

*Current  
application*

Patent Family ( 3 patents, 106 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2004075782	A2	20040910	WO 2004US5950	A	20040226	200464	B
US 20040236192	A1	20041125	US 2003449963	P	20030226	200478	E
			US 2003453009	P	20030306		
			US 2004789492	A	20040226		
US 20040254432	A1	20041216	US 2003445714	P	20030207	200482	E
			US 2003453009	P	20030306		
			US 2004776022	A	20040209		

Priority Applications (no., kind, date): US 2004789492 A 20040226; US 2003445714 P 20030207; US 2003453009 P 20030306; US 2003449963 P 20030226; US 2004776022 A 20040209

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2004075782	A2	EN	47	10		
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
Regional Designated States, Original	AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
US 20040236192	A1	EN			Related to Provisional	US 2003449963
					Related to Provisional	US 2003453009
US 20040254432	A1	EN			Related to Provisional	US 2003445714
					Related to Provisional	US 2003453009

## Alerting Abstract WO A2

**NOVELTY** - A tissue condition monitoring system (22) includes a housing to be implanted within a body and has surfaces located on an outer side of the housing; first and **second sensing** systems for **sensing** physiological property of **tissue** (100) **proximate** to respective surface; and a processing system in communication with the sensing systems to compute a difference between the physiological property sensed by the sensing systems.

**DESCRIPTION** - An **INDEPENDENT CLAIM** is also included for monitoring the condition of a tissue by receiving information from first and **second sensing** systems; processing information from the sensing systems to compute a difference in the sensed information; and monitoring the information received from the sensing systems to evaluate the condition of the tissue over time.

**USE** - For intraoperative and/or post-operative **monitoring** of tissue condition, e.g. **temperature**, oxygenation, color, pH, nicotinamide adenine dinucleotide (NADH) levels, prothrombin levels, biochemical composition, turgidity, or pressure (claimed).

**ADVANTAGE** - The system aids physicians in predicting problems and complications associated with internal trauma or surgery. It is positionable and removable with relatively minimal effort, minimally invasive and causes minimal discomfort for the patient. It provides continuous current information about tissue or organ condition, provides direct information about tissue or organ condition, and/or provides feedback on the effects of interventions, such as medications or other procedures to improve tissue or organ condition.

**DESCRIPTION OF DRAWINGS** - The figure shows a system for differential tissue monitoring.

1 Implantable device

22 Monitoring system

26 Display

64 Antenna

100 Tissue

**Title Terms /Index Terms/Additional Words:** MONITOR; SYSTEM; TISSUE; CONDITION; TEMPERATURE; SENSE; PHYSIOLOGICAL; PROPERTIES; PROXIMATE ; RESPECTIVE; SURFACE; HOUSING; IMPLANT; BODY

## Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; A61F			Main		"Version 7"
A61B-006/00			Secondary		"Version 7"

US Classification, Issued: 600301000, 600373000, 600327000, 600478000

File Segment: CPI; EngPI; EPI

DWPI Class: B04; D22; S02; S03; P31; P32

Manual Codes (EPI/S-X): S02-F04J; S02-K03B1; S03-A02C; S03-B01G; S03-E14H6

Manual Codes (CPI/A-N): B04-E01; B04-F01; B04-H19; B11-C04A; B11-C09; D09-C01



Derwent WPIX

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0012384167 *Drawing available*

WPI Acc no: 2002-327593/

Related WPI Acc No: 1983-778364; 1993-026529; 1993-075249; 1994-316576; 1994-316577; 1995-193065; 1995-357613; 2000-105482

XRAM Acc no: C2002-094611

XRPX Acc No: N2002-256878

**Measurement of partial pressure of gastrointestinal gases uses lumen inserted in patient, with chamber and detector with carbon dioxide sensor to generate signal representing gas concentration**

Patent Assignee: INSTRUMENTARIUM CORP (INST-N)

Inventor: FIDDIAN-GREEN R G

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6334064	B1	20011225	US 1988237286	A	19880826	200236	B
			US 1988237287	A	19880826		
			US 1989380704	A	19890713		
			US 1989380706	A	19890713		
			US 1990496185	A	19900320		
			US 1990496186	A	19900320		
			US 1991719098	A	19910620		
			US 1991733071	A	19910717		
			US 1992892631	A	19920602		
			US 1992994721	A	19921222		
			US 199314624	A	19930208		
			US 1993146427	A	19931029		
			US 1994270988	A	19940705		
			US 1994322081	A	19941012		
			US 1995452183	A	19950526		

Priority Applications (no., kind, date): US 1994322081 A 19941012; US 1994270988 A 19940705; US 1993146427 A 19931029; US 199314624 A 19930208; US 1992994721 A 19921222; US 1992892631 A 19920602; US 1991733071 A 19910717; US 1991719098 A 19910620; US 1990496186 A 19900320; US 1990496185 A 19900320; US 1989380706 A 19890713; US 1989380704 A 19890713; US 1988237287 A 19880826; US 1988237286 A 19880826; US 1995452183 A 19950526

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 6334064	B1	EN	21	12	Continuation of application	US 1988237286
					Continuation of application	US 1988237287
					Continuation of application	US 1989380704

					Continuation of application	US 1989380706
					Continuation of application	US 1990496185
					Continuation of application	US 1990496186
					Continuation of application	US 1991719098
					Continuation of application	US 1991733071
					Continuation of application	US 1992892631
					C-I-P of application	US 1992994721
					Continuation of application	US 199314624
					Continuation of application	US 1993146427
					Continuation of application	US 1994270988
					Continuation of application	US 1994322081
					Continuation of patent	US 5174290
					Continuation of patent	US 5186172
					Continuation of patent	US 5456251

### Alerting Abstract US B1

**NOVELTY** - **Measurement** of partial **pressure** of at least one gas in gastrointestinal lumen of a patient involves defining intraluminal region of interest in patient's gut by catheter insertion. The tip of the **catheter** includes a chamber, and a **detector** with a carbon dioxide sensor that can be selectively operated to generate a signal representing the CO<sub>2</sub> concentration in the intraluminal region.

**DESCRIPTION** - **Measurement** of partial **pressure** of at least one gas in gastrointestinal lumen of a patient involves defining intraluminal region of interest in patient's gut by catheter insertion. The tip (32) of the catheter is placed in the desired intraluminal region, and the other end is outside the patient. The catheter further includes an open faced chamber (40) near the end inside the patient, and a gas permeable membrane (36) spanning the chamber to define a gas filled gas sensing region that is fluidically isolated from the end outside the patient, and includes a detector with a carbon dioxide sensor (42) that can be selectively operated to generate a signal representing the CO<sub>2</sub> concentration in the intraluminal region. The concentration of gases is sensed in the region of interest, and a signal representing their respective concentrations, and hence their partial pressure in the region of interest is determined. An **INDEPENDENT CLAIM** is included for an intraluminal gastrointestinal gas measuring system, comprising an elongated **catheter** with at least one gas **sensor** at an end inside the patent, including a sensor to generate a signal representing the partial pressures of the detected gases for use in the above method.

**USE** - Gastrointestinal lumen for remote electronic and optical sensing in medical diagnostic methods.

**ADVANTAGE** - Previous sampling techniques, although providing accurate and reliable results, are however, not appropriate for cases in which remote sensing and automatic calculation of the organ or organ wall pH would be advantageous, such as with critically ill or intensive care patients. The novel method eliminates the need for cumbersome aspiration of sampling fluid, thus allowing easier and quicker diagnosis of **internal hollow organs**.

**DESCRIPTION OF DRAWINGS** - The drawing shows a tonometric catheter. .

32closed end

36membrane

40sampling chamber

42sensor

**Title Terms /Index Terms/Additional Words:** MEASURE; PRESSURE; GASTRO; GAS; LUMEN; INSERT; PATIENT; CHAMBER; DETECT; CARBON; SENSE; GENERATE; SIGNAL; REPRESENT; CONCENTRATE

## Class Codes

### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"

US Classification, Issued: 600311000, 600504000

File Segment: CPI; EngPI; EPI

DWPI Class: D22; E36; J04; S02; S03; S05; P31

Manual Codes (EPI/S-X): S02-F04C3A; S03-E03B1; S05-D01X

Manual Codes (CPI/A-N): D09-C01; E11-Q03; E11-Q03G; E31-N05C; J04-C02

19/5/3 (Item 3 from file: 350) [Links](#)

Derwent WPIX

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0011208725 *Drawing available*

WPI Acc no: 2002-147504/200219

Related WPI Acc No: 2006-019987

XRPX Acc No: N2002-111864

**System for efficient delivery of RF energy to cardiac tissue for treating e.g. fibrillation, by ablating cardiac tissue; controls amount of RF power to provide gradual increase of power in real-time during initial ramp-up phase**

Patent Assignee: AGILITY CAPITAL LLC (AGIL-N); CARDIMA INC (CARD-N); CHAN E K Y (CHAN-I); NASAB M (NASA-I)

Inventor: CHAN E K Y; NASAB M

### Patent Family ( 9 patents, 95 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2001087172	A1	20011122	WO 2001US15346	A	20010514	200219	B
AU 200161486	A	20011126	AU 200161486	A	20010514	200222	E
EP 1280467	A1	20030205	EP 2001935386	A	20010514	200310	E
			WO 2001US15346	A	20010514		
JP 2003533267	W	20031111	JP 2001583643	A	20010514	200375	E
			WO 2001US15346	A	20010514		
CN 1440258	A	20030903	CN 2001812407	A	20010514	200380	E
US 20040006337	A1	20040108	WO 2001US15346	A	20010514	200404	E
			US 2003333113	A	20030114		
US 20050010206	A1	20050113	US 2000203847	P	20000512	200506	E
			WO 2001US15346	A	20010514		
			US 2003333113	A	20030114		

			US 2004846260	A	20040514		
US 6936047	B2	20050830	US 2000203847	P	20000512	200557	E
			WO 2001US15346	A	20010514		
			US 2003333113	A	20030114		
AU 2001261486	A8	20051006	AU 2001261486	A	20010514	200612	E

Priority Applications (no., kind, date): US 2004846260 A 20040514; US 2003333113 A 20030114; WO 2001US15346 A 20010514; US 2000203847 P 20000512

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2001087172	A1	EN	46	10		
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200161486	A	EN			Based on OPI patent	WO 2001087172
EP 1280467	A1	EN			PCT Application	WO 2001US15346
					Based on OPI patent	WO 2001087172
Regional Designated States,Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2003533267	W	JA	50		PCT Application	WO 2001US15346
					Based on OPI patent	WO 2001087172
US 20040006337	A1	EN			PCT Application	WO 2001US15346
US 20050010206	A1	EN			Related to Provisional	US 2000203847
					C-I-P of application	WO 2001US15346
					C-I-P of application	US 2003333113
US 6936047	B2	EN			Related to Provisional	US 2000203847
					PCT Application	WO 2001US15346
					Based on OPI patent	WO 2001087172
AU 2001261486	A8	EN			Based on OPI patent	WO 2001087172

**Alerting Abstract WO A1**

**NOVELTY** - Several temperature sensors may be positioned in proximity to each of ablation electrodes for measuring the temperature of cardiac tissue in contact with the ablation electrodes. An information processor and RF output controller control the amount of RF power delivered through the electrical coupling to provide a gradual increase in RF power calculated in real-time during an initial ramp-up phase.

**DESCRIPTION** - to limit the delivery of RF power through the electrical coupling based on the temperature of cardiac tissue in contact with the series of ablation electrodes, thereby reducing the likelihood of coagulum

formation during delivery of RF energy to cardiac tissue.  
An INDEPENDENT CLAIM is included for:

- A. a method for forming a cardiac lesion by delivering RF energy from an RF generator to an ablation site of cardiac tissue using an ablation catheter with an ablation electrode

USE - For using RF energy to treat certain cardiac abnormalities, such as fibrillation, by ablating cardiac tissue.

ADVANTAGE - Provides efficient delivery of RF energy to cardiac tissue with an ablation catheter, for yielding consistently effective RF ablation procedures and improved patient outcomes.

DESCRIPTION OF DRAWINGS - The drawing shows a schematic block diagram of an information processor and RF output controller in accordance with the invention.

**Title Terms /Index Terms/Additional Words:** SYSTEM; EFFICIENCY; DELIVER; RF; ENERGY; CARDIAC; TISSUE; TREAT; FIBRILLATE; ABLATE; CONTROL; AMOUNT; POWER; GRADUAL; INCREASE; REAL; TIME; INITIAL; RAMP; UP; PHASE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/12; A61B-018/14; A61B-018/18			Main		"Version 7"

US Classification, Issued: 606041000, 606041000, 606034000, 606034000, 606032000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B

19/5/4 (Item 4 from file: 350) [Links](#)

Derwent WPIX

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0010690141 *Drawing available*

WPI Acc no: 2001-299788/

XRPX Acc No: N2001-215089

**Mechanical property measuring by determining impedance between two electrodes set within blood vessel connected to human organ to obtain impedance signal correlated with human organ mechanical property**

Patent Assignee: IMPULSE DYNAMICS NV (IMPU-N)

Inventor: KIMCHI Y; PRUTCHI D; SHEMER I

Patent Family ( 3 patents, 92 countries )

Application Number

File Segment: EngPI; EPI;  
DWPI Class: S05; T01; P34  
Manual Codes (EPI/S-X): S05-A02A; T01-J06A; T01-S03

21/5/5 (Item 5 from file: 350) [Links](#)

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0013960886 *Drawing available*

WPI Acc no: 2004-141556/200414

Related WPI Acc No: 2006-192960

XRAM Acc no: C2004-056492

XRPX Acc No: N2004-112922

**Monitoring system for e.g. wound site monitoring, comprising sensors spaced apart from one another and connected with user-retainable support**

Patent Assignee: BLOOM M (BLOO-I); HEINRICHS W L (HEIN-I); KOVACS G T A (KOVA-I); SALZBERG D (SALZ-I); UNIV LELAND STANFORD JUNIOR (STRD)

Inventor: BLOOM M; HEINRICHS W L; KOVACS G T A; SALZBERG D

Patent Family ( 2 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20030199783	A1	20031023	US 2002125051	A	20020417	200414	B
US 6963772	B2	20051108	US 2002125051	A	20020417	200573	E

Priority Applications (no., kind, date): US 2002125051 A 20020417

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 20030199783	A1	EN	17	6	

#### Alerting Abstract US A1

**NOVELTY** - A **monitoring** system comprises sensors such as **temperature** sensors or impedance sensor probes, spaced apart from one another and connected with a user-retainable support to take measurements on patients and be read while the support is retained by the patient.

**DESCRIPTION** - An **INDEPENDENT CLAIM** is also included for a monitoring method comprising contacting an area of patient's body with the monitoring system, and obtaining and repeatedly checking sensor data while the monitoring system is in contact with the patient. The sensor data generated at a particular instant is used to check for a biological state.

**USE** - To monitor wound site, traumatic incision, neoplasm, organ transplant site, tissue transplant site, vascular anastomosis site, immunologic proliferation site, inflammatory mass and/or abscess. When the patient is a viable

fetus, the monitoring system is introduced internally to a pregnant female (all claimed).

**ADVANTAGE** - The system enables for sustained and continued use by patients. It allows for constant or periodic monitoring by patient, physician or other care provider by holding the sensors in close contact with the patient for extended period using a user-retainable support.

**DESCRIPTION OF DRAWINGS** - The figure shows a sensor.

2 Impedance sensor

4 Electrical leads

6 Proximal end

10 Distal end

**Title Terms /Index Terms/Additional Words:** MONITOR; SYSTEM; WOUND; SITE; COMPRISE; SENSE; SPACE; APART; ONE; CONNECT; USER; RETAIN; SUPPORT

### Class Codes

#### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; A61B-005/053			Main		"Version 7"

US Classification, Issued: 600549000, 600547000, 600549000

File Segment: CPI; EngPI; EPI

DWPI Class: B07; S02; S03; S05; T01; P31

Manual Codes (EPI/S-X): S02-K04A; S02-K04C; S03-B01C; S03-E02D; S05-D01D1; S05-D01E; S05-G02B2; T01-J06A; T01-J07A

Manual Codes (CPI/A-N): B11-C04; B11-C08; B12-K04

21/5/7 (Item 7 from file: 350) [Links](#)

Derwent WPIX

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0011081450 *Drawing available*

WPI Acc no: 2002-016828/

Related WPI Acc No: 1999-336889; 2000-282782; 2001-059617; 2001-307609; 2001-342432; 2001-464365; 2001-535797; 2001-564662; 2002-009318; 2003-298258

XRPX Acc No: N2002-013548

**In-vivo simulator for microwave cardiac treatment pumps fluid past sample within receptacle while supply cable supplies electromagnetic energy into sample, having multiple temperature sensors within**

Patent Assignee: NASA US NAT AERO & SPACE ADMIN (USAS)

Inventor: ARNDT G D; CARL J R; KARASACK V G; PACIFICO A; PIEPER C F; RAFFOUL G W

#### Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
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US 6175768	B1	20010116	US 1996641045	A	19960417	200202	B
			US 1998154622	A	19980916		

Priority Applications (no., kind, date): US 1996641045 A 19960417; US 1998154622 A 19980916

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 6175768	B1	EN	22	16	Division of application	US 1996641045

**Alerting Abstract US B1**

**NOVELTY** - Sample material is held **within** a water tight biological **tissue** receptacle. A fluid is pumped past the sample material. **Several** temperature sensors (838) are disposed within the sample material. A supply cable induces electromagnetic energy into sample material while a power source supplies power to antenna of supply cable.

**DESCRIPTION** - An **INDEPENDENT CLAIM** is also included for in-vivo simulation method.

**USE** - For thermally ablating arrhythmogenic cardiac tissue during treatment of ventricular tachycardia.

**ADVANTAGE** - Prevents damaging of surrounding tissues as the temperature rise in nearby blood and heart tissues is reliably controlled.

**DESCRIPTION OF DRAWINGS** - The figure is a schematic representation of test-setup for **temperature** profile measurement.

838 Temperature sensors

840 Tissue receptacle

833 Optical cables

**Title Terms /Index Terms/Additional Words:** VIVO; SIMULATE; MICROWAVE; CARDIAC; TREAT; PUMP; FLUID; PASS; SAMPLE; RECEPTACLE; SUPPLY; CABLE; ELECTROMAGNET; ENERGY; MULTIPLE; TEMPERATURE; SENSE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61F-002/00			Main		"Version 7"

US Classification, Issued: 607101000, 606033000, 422022000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; T01; V07; W02; P32

Manual Codes (EPI/S-X): S03-B01E; S05-D02X; S05-P; T01-J06A; T01-J15H; V07-N03; W02-B10

21/5/8 (Item 8 from file: 350) [Links](#)

Derwent WPIX

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0010977949 Drawing available

WPI Acc no: 2001-602199/200168

Related WPI Acc No: 2003-659133; 2005-581358

XRPX Acc No: N2001-449379

**Physiologic characteristic monitoring device for determining arterial blood pressure, includes controller which computes blood physiological characteristic, based on absorbed radiation and probe relative height**

Patent Assignee: MILLS A K (MILL-I); WOOLSTHORPE TECHNOLOGIES LLC (WOOL-N)

Inventor: MILLS A K

Patent Family ( 14 patents, 93 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2001024845	A2	20010412	WO 2000US27654	A	20001006	200168	B
AU 200079973	A	20010510	AU 200079973	A	20001006	200168	E
EP 1233697	A2	20020828	EP 2000970621	A	20001006	200264	E
			WO 2000US27654	A	20001006		
US 20020188205	A1	20021212	US 1999158097	P	19991007	200301	E
			US 2000684104	A	20001006		
			US 2002196474	A	20020715		
US 6537225	B1	20030325	US 1999158097	P	19991007	200325	E
			US 2000684104	A	20001006		
JP 2003511101	W	20030325	WO 2000US27654	A	20001006	200330	E
			JP 2001527844	A	20001006		
AU 766952	B	20031030	AU 200079973	A	20001006	200382	E
NZ 518142	A	20031128	NZ 518142	A	20001006	200382	E
			WO 2000US27654	A	20001006		
US 6719705	B2	20040413	US 1999158097	P	19991007	200425	E
			US 2000684104	A	20001006		
			US 2002196474	A	20020715		
US 20040162493	A1	20040819	US 1999158097	P	19991007	200455	E
			US 2000684104	A	20001006		
			US 2004773596	A	20040206		
US 20050131306	A9	20050616	US 1999158097	P	19991007	200540	E
			US 2000684104	A	20001006		
			US 2002196474	A	20020715		
			US 2004773596	A	20040206		
US 6921367	B2	20050726	US 1999158097	P	19991007	200549	E
			US 2000684104	A	20001006		
			US 2002196474	A	20020715		
			US 2004773596	A	20040206		
MX 2002003412	A1	20041001	WO 2000US27654	A	20001006	200557	E
			MX 20023412	A	20020404		
MX 234941	B	20060315	WO 2000US27654	A	20001006	200651	E

			MX 20023412	A	20020404		
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Priority Applications (no., kind, date): US 2004773596 A 20040206; US 2002196474 A 20020715; US 2000684104 A 20001006; US 1999158097 P 19991007

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2001024845	A2	EN	51	25		
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Regional Designated States, Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
AU 200079973	A	EN			Based on OPI patent	WO 2001024845
EP 1233697	A2	EN			PCT Application	WO 2000US27654
					Based on OPI patent	WO 2001024845
Regional Designated States, Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
US 20020188205	A1	EN			Related to Provisional	US 1999158097
					Division of application	US 2000684104
US 6537225	B1	EN			Related to Provisional	US 1999158097
JP 2003511101	W	JA	55		PCT Application	WO 2000US27654
					Based on OPI patent	WO 2001024845
AU 766952	B	EN			Previously issued patent	AU 200079973
					Based on OPI patent	WO 2001024845
NZ 518142	A	EN			PCT Application	WO 2000US27654
					Based on OPI patent	WO 2001024845
US 6719705	B2	EN			Related to Provisional	US 1999158097
					Division of application	US 2000684104
US 20040162493	A1	EN			Related to Provisional	US 1999158097
					Division of application	US 2000684104
					Division of patent	US 6537225
US 20050131306	A9	EN			Related to Provisional	US 1999158097
					Division of application	US 2000684104
					Division of application	US 2002196474
					Division of patent	US 6537225
					Division of patent	US 6719705
US 6921367	B2	EN			Related to Provisional	US 1999158097

				Division of application	US 2000684104
				Division of application	US 2002196474
				Division of patent	US 6537225
				Division of patent	US 6719705
MX 2002003412	A1	ES		PCT Application	WO 2000US27654
				Based on OPI patent	WO 2001024845
MX 234941	B	ES		PCT Application	WO 2000US27654
				Based on OPI patent	WO 2001024845

#### Alerting Abstract WO A2

**NOVELTY** - The tissue probe (48) has a detector (42) which receives the radiation from the emitter (40), after absorbance through the patient's blood. A position sensor (50) determines the relative height compared to a level corresponding to the patient's heart. A controller computes blood physiological characteristics based on absorbed radiation and probe relative height.

**DESCRIPTION** - The emitter (40) emits visible light, infrared light and ultraviolet light. An **INDEPENDENT CLAIM** is also included for the method of non-invasively determining the physiological characteristic of patient's blood.

**USE** - For **determining** arterial blood pressure, venous pressure, arterial oxygen saturation, venous oxygen saturation, arterial pulse wave velocity, aortic pulse wave velocity, aortic pulse flow velocity, cardiac stroke volume, cardiac output, heart rate and respiratory rate.

**ADVANTAGE** - Since the cardiac output and other characteristics are continuously computed, the adequacy of the surgical repair is judged immediately. Since the procedures are relatively brief and accomplished without general anesthesia, the invasive monitoring methods are not often desired despite the illness of patients. The need for highly trained nursing personal for operating purpose is eliminated. Ambulances, emergency vehicles and military vehicles can employ the device, as it is very simple to operate and provides data that currently is impossible for them to obtain.

**DESCRIPTION OF DRAWINGS** - The figure shows the probe with position sensor.

40 Emitter

42 Detector

48 Tissue probe

50 Sensor

**Title Terms /Index Terms/Additional Words:** CHARACTERISTIC; MONITOR; DEVICE; DETERMINE; ARTERY; BLOOD; PRESSURE; CONTROL; COMPUTATION; PHYSIOLOGICAL; BASED; ABSORB; RADIATE; PROBE; RELATIVE; HEIGHT

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/02; A61B-005/145; A61M			Main		"Version 7"
A61B-005/00; A61B-005/022; A61B-005/0245; G01N-021/27			Secondary		"Version 7"
A61B-0005/00	A	I		R	20060101
A61B-0005/0205	A	I		R	20060101

A61B-0005/021	A	N		R	20060101
A61B-0005/0285	A	I		R	20060101
A61B-0005/029	A	N		R	20060101
A61B-0005/0402	A	N		R	20060101
A61B-0005/0408	A	N		R	20060101
A61B-0005/00	C	I		R	20060101
A61B-0005/0205	C	I		R	20060101
A61B-0005/021	C	N		R	20060101
A61B-0005/026	C	I		R	20060101
A61B-0005/0402	C	N		R	20060101
A61B-0005/0408	C	N		R	20060101

US Classification, Issued: 600526000, 600481000, 600485000, 600500000, 600481000, 600323000, 600324000, 600485000, 600500000, 600501000, 600502000, 600503000, 600481000, 600300000, 600301000, 600323000, 600324000, 600504000, 600507000, 600526000, 600526000, 600481000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; T01; P31; P34

Manual Codes (EPI/S-X): S03-E04A5; S05-D01B1A; S05-D01B1B; S05-D01B5; S05-D01C1; S05-D01G; S05-D02X; T01-J06A

21/5/13 (Item 13 from file: 350) [Links](#)

Derwent WPIX

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0006978963 *Drawing available*

WPI Acc no: 1994-263700/199432

Related WPI Acc No: 1994-263690; 1994-263691; 1997-011791; 1998-099750; 1998-099941; 1997-362537; 1996-220824

XRPX Acc No: N1994-207525; N1997-301461

**Method for treating patient's heart exhibiting arrhythmia - involves locating tissue in heart and delivering occluding element to coronary arterial passageway which feed oxygenated blood to create infarct**

Patent Assignee: CARDIMA INC (CARD-N)

Inventor: LITTMAN L; SAMSON G; SUNG R; VEGH G B

Patent Family ( 11 patents, 20 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1994016632	A1	19940804	WO 1994US1018	A	19940128	199432	B
AU 199462330	A	19940815	AU 199462330	A	19940128	199444	E
EP 682502	A1	19951122	EP 1994909506	A	19940128	199551	E
			WO 1994US1018	A	19940128		
JP 8506034	W	19960702	JP 1994517348	A	19940128	199650	E

			WO 1994US1018	A	19940128		
US 5645082	A	19970708	US 199310818	A	19930129	199733	E
			US 199343449	A	19930405		
			US 199357294	A	19930505		
			US 1994188384	A	19940127		
AU 692762	B	19980618	AU 199462330	A	19940128	199835	E
US 5881732	A	19990316	US 199310818	A	19930129	199918	E
			US 199343449	A	19930405		
			US 199357294	A	19930505		
			US 1994188384	A	19940127		
			US 1996667394	A	19960621		
US 5960796	A	19991005	US 199310818	A	19930129	199948	E
			US 199343449	A	19930405		
			US 199357294	A	19930505		
			US 1994188384	A	19940127		
			US 1995482126	A	19950607		
			US 1997968147	A	19971112		
EP 682502	B1	20020724	EP 1994909506	A	19940128	200256	E
			WO 1994US1018	A	19940128		
DE 69431038	E	20020829	DE 69431038	A	19940128	200264	E
			EP 1994909506	A	19940128		
			WO 1994US1018	A	19940128		
ES 2180570	T3	20030216	EP 1994909506	A	19940128	200321	E

Priority Applications (no., kind, date): US 1997968147 A 19971112; US 1996667394 A 19960621; US 1995482126 A 19950607; US 199357294 A 19930505; US 199343449 A 19930405; US 199310818 A 19930129; US 1994188384 A 19940127

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1994016632	A1	EN	42	16		
National Designated States, Original	AU CA JP					
Regional Designated States, Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
AU 199462330	A	EN			Based on OPI patent	WO 1994016632
EP 682502	A1	EN	42	16	PCT Application	WO 1994US1018
					Based on OPI patent	WO 1994016632
Regional Designated States, Original	AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
JP 8506034	W	JA	36		PCT Application	WO 1994US1018
					Based on OPI patent	WO 1994016632

US 5645082	A	EN	14	16	C-I-P of application	US 199310818
					C-I-P of application	US 199343449
					C-I-P of application	US 199357294
AU 692762	B	EN			Previously issued patent	AU 9462330
					Based on OPI patent	WO 1994016632
US 5881732	A	EN			C-I-P of application	US 199310818
					C-I-P of application	US 199343449
					C-I-P of application	US 199357294
					Division of application	US 1994188384
					Division of patent	US 5645082
US 5960796	A	EN			C-I-P of application	US 199310818
					C-I-P of application	US 199343449
					C-I-P of application	US 199357294
					Division of application	US 1994188384
					Continuation of application	US 1995482126
					Division of patent	US 5645082
					Continuation of patent	US 5685322
EP 682502	B1	EN			PCT Application	WO 1994US1018
					Based on OPI patent	WO 1994016632
Regional Designated States, Original	AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
DE 69431038	E	DE			Application	EP 1994909506
					PCT Application	WO 1994US1018
					Based on OPI patent	EP 682502
					Based on OPI patent	WO 1994016632
ES 2180570	T3	ES			Application	EP 1994909506
					Based on OPI patent	EP 682502

#### Alerting Abstract WO A1

The method involves locating tissue in the patient's heart which is causing the arrhythmia. Then delivering an occluding element to a coronary arterial passageway which feeds oxygenated blood to the tissues causing the arrhythmia to block the flow of oxygenated blood to the tissues creating an infarct in and terminating the arrhythmia. The occluding element occludes the arterial passageway, and is a helical wound wire coil. The tissue causing the arrhythmia is located by at least one intravascular device having electrodes on the distal portion which is disposed in the coronary artery or a cardiac vein.

ADVANTAGE - The occluding element can be advanced quickly through inner lumen, and more comprehensive or global mapping of the heart and location of tissue causing arrhythmia.

**Title Terms /Index Terms/Additional Words:** METHOD; TREAT; PATIENT; HEART; EXHIBIT; ARRHYTHMIC; LOCATE; TISSUE; DELIVER; OCCLUDE; ELEMENT; CORONARY; ARTERY; PASSAGE; FEED; OXYGENATE; BLOOD; INFARCTION

#### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/12; A61B-017/36; A61B-019/00			Main		"Version 7"
A61B-005/0408; A61B-005/042; A61B-005/0464; A61B-005/0478; A61B-005/0492			Secondary		"Version 7"

US Classification, Issued: 128897000, 606195000, 128898000, 606195000, 128897000, 606108000, 600381000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01A

21/5/16 (Item 16 from file: 350) [Links](#)

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0006086541 *Drawing available*

WPI Acc no: 1992-325787/199240

XRPX Acc No: N1992-249026

**Arterial blood flow detector using pressure sensors in cuff on artery - is connected to level detection circuits and notch detecting circuits to control timers and cuff pressure and to provide output signals**

Patent Assignee: SONY CORP (SONY)

Inventor: SATOH Y; TAKASHIMA M

Patent Family ( 8 patents, 4 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 506520	A2	19920930	EP 1992400726	A	19920318	199240	B
EP 506520	A3	19930407	EP 1992400726	A	19920318	199351	E
US 5365930	A	19941122	US 1992851662	A	19920316	199501	E
US 5396895	A	19950314	US 1992851662	A	19920316	199516	E
			US 199352605	A	19930427		
EP 506520	B1	19970820	EP 1992400726	A	19920318	199738	E
DE 69221654	E	19970925	DE 69221654	A	19920318	199744	E
			EP 1992400726	A	19920318		
JP 3006123	B2	20000207	JP 199177269	A	19910318	200012	E
KR 190943	B1	19990615	KR 19924291	A	19920316	200056	E

Priority Applications (no., kind, date): JP 199177269 A 19910318

**Patent Details**

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
EP 506520	A2	EN	18	13		
Regional Designated States, Original	DE FR GB					
EP 506520	A3	EN				
US 5365930	A	EN	18	13		
US 5396895	A	EN	20	13	Division of application	US 1992851662
EP 506520	B1	EN	22	13		
Regional Designated States, Original	DE FR GB					
DE 69221654	E	DE			Application	EP 1992400726
					Based on OPI patent	EP 506520
JP 3006123	B2	JA	8		Previously issued patent	JP 04288131

**Alerting Abstract EP A2**

The appts. has **three** pressure sensors (1, 2, 3) fixed to the patient's artery connected to an output unit (4) and each also connected to a level detecting circuit (10, 16, 19). **Two** of the sensors are also connected to notch detecting circuits (11, 17) which include low pass filters (11A, 17A) and subtractors (11B, 17B) to obtain notch signals which are supplied to the respective timers as stop signals.

The level detector associated with first of these sensors detects the shun of the sunko and starts the three timers (12, 13, 14). The **second level detector** detects the khan of the sunko and stops the third timer and is also supplied to a biasing control unit (8) and a latch circuit. The biasing control circuit is connected to a pressure sensor (9) in the air bag holding the other **three sensors** onto the patient and thence to a second latch. The outputs from the two latches are connected to a subtractor (21) and a divider whose output is connected to the output unit. The biasing controller adjusts the force applied by the airbag to restrict the blood flow. The output unit provides a display of the various signals.

**ADVANTAGE** - Correctly determines blood circulation of patient without contact with blood or requiring particular experience including determination of blood viscosity and artery hardness

**Title Terms /Index Terms/Additional Words:** ARTERY; BLOOD; FLOW; DETECT; PRESSURE; SENSE; CUFF; CONNECT; LEVEL; CIRCUIT; NOTCH; CONTROL; TIME; OUTPUT; SIGNAL

**Class Codes**

**International Patent Classification**

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; A61B-005/02; A61B-005/021; A61B-005/026; A61B-005/205			Main		"Version 7"
A61B-005/0245			Secondary		"Version 7"

US Classification, Issued: 128672000, 128687000, 128690000, 128687000, 128672000, 434268000, 434272000



File Segment: EngPI; EPI;  
 DWPI Class: S05; P31  
 Manual Codes (EPI/S-X): S05-D01B1

21/5/17 (Item 17 from file: 350) [Links](#)

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0005670063 *Drawing available*

WPI Acc no: 1991-281180/

XRAM Acc no: C1991-121821

XRPX Acc No: N1991-214957

**Multi-probe system for measurements within tissue - includes thermal diffusion monitor, pressure monitor and multiple parameter monitor**

Patent Assignee: POWERS A D (POWE-I)

Inventor: POWERS A D

Patent Family ( 6 patents, 17 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1991012765	A	19910905	WO 1991US322	A	19910116	199138	B
AU 199172535	A	19910918				199150	E
EP 517734	A1	19921216	EP 1991904218	A	19910116	199251	E
			WO 1991US322	A	19910116		
US 5207227	A	19930504	US 1990488153	A	19900302	199319	E
			US 1991701353	A	19910510		
JP 5508328	W	19931125	JP 1991504402	A	19910116	199401	E
			WO 1991US322	A	19910116		
EP 517734	A4	19930113	US 1992972728	A	19921106	199525	E

Priority Applications (no., kind, date): US 1991701353 A 19910510; US 1990488153 A 19900302

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1991012765	A	EN				
National Designated States,Original	AT CA JP					
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LU NL SE					
EP 517734	A1	EN	29		PCT Application	WO 1991US322
					Based on OPI patent	WO 1991012765

Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE									
US 5207227	A	EN	10	9	Continuation of application	US 1990488153				
JP 5508328	W	JA	14		PCT Application	WO 1991US322				
					Based on OPI patent	WO 1991012765				
EP 517734	A4	EN								

#### Alerting Abstract WO A

Support structure (26) for positioning a number of elements **inside tissue**, carries a thermal diffusion sensor (20) to **monitor** blood flow, a **pressure monitor** (22) and a **multiple parameter sensor** (24) to monitor critical physiological parameters of the tissue.

Has the support structure formed of silicone based material. The thermal diffusion monitor a conical hot film probe of metal deposited in a thin layer on a backing material with a double quartz protective coating deposited over the thin layer with **multiple sensor** tips to simultaneously monitor blood flow at different tissue sites. The **multiple parameter sensor** can measure the oxygen content, temp., potential and electrical conductivity of the tissue.

USE/ADVANTAGE - As a multiprobe with thermal diffusion flow monitor for placement **within biological tissues** e.g. the brain. Multiprobe has improved reliability, smaller overall size, simpler sensor positioning, better compatibility and improved capability to **monitor** blood flow, **pressure** and other physiological parameters, than prior devices.

**Title Terms /Index Terms/Additional Words:** MULTI; PROBE; SYSTEM; MEASURE; TISSUE; THERMAL; DIFFUSION; MONITOR; PRESSURE; MULTIPLE; PARAMETER

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; A61B-005/026			Main		"Version 7"
A61B-005/0215; G01F-001/68			Secondary		"Version 7"

US Classification, Issued: 128691000, 128736000, 128675000, 073202500, 073204160, 073204270

File Segment: CPI; EngPI; EPI

DWPI Class: A96; S05; P31

Manual Codes (EPI/S-X): S05-D01B1; S05-D02X

Manual Codes (CPI/A-N): A12-V03C2

25/5/4 (Item 3 from file: 350) [Links](#)

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*Current  
application*

0014451228 *Drawing available*

WPI Acc no: 2004-642220/200462

Related WPI Acc No: 2004-661834

XRAM Acc no: C2004-230827

XRPX Acc No: N2004-507899

**Surgical drain used to monitor condition of tissue in body cavity after trauma or surgical manipulation, includes elongated conduit, and two sensing systems**

Patent Assignee: UNIV SOUTHERN CALIFORNIA (UYSC-N); UNIV SOUTHERN CALIFORNIA MANN INST BIOME (UYSC-N)

Inventor: JABBOUR N; NECOLA S R E; SHEHADA R E N

Patent Family ( 8 patents, 107 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2004071279	A2	20040826	WO 2004US3807	A	20040209	200462	B
US 20040230118	A1	20041118	US 2003445714	P	20030207	200477	E
			US 2003453009	P	20030306		
			US 2004775666	A	20040209		
US 20040230132	A1	20041118	US 2003445714	P	20030207	200477	E
			US 2003453009	P	20030306		
			US 2004776021	A	20040209		
US 20040230179	A1	20041118	US 2003445714	P	20030207	200477	E
			US 2003453009	P	20030306		
			US 2004776020	A	20040209		
US 20040254431	A1	20041216	US 2003445714	P	20030207	200482	E
			US 2003453009	P	20030306		
			US 2004775670	A	20040209		
EP 1599124	A2	20051130	EP 2004709523	A	20040209	200578	E
			WO 2004US3807	A	20040209		
US 20060217684	A1	20060928	US 2003445714	P	20030207	200664	E
			US 2003453009	P	20030306		
			US 2004775666	A	20040209		
			US 2004776022	A	20040209		
			US 2006420695	A	20060526		
US 20060217685	A1	20060928	US 2003445714	P	20030207	200664	E
			US 2003453009	P	20030306		
			US 2004775666	A	20040209		
			US 2006420702	A	20060526		

Priority Applications (no., kind, date): US 2003445714 P 20030207; US 2003453009 P 20030306; US 2004775666

A 20040209; US 2004775670 A 20040209; US 2004776020 A 20040209; US 2004776021 A 20040209; US 2004776022 A 20040209; US 2006420695 A 20060526; US 2006420702 A 20060526

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2004071279	A2	EN	81	16		
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
Regional Designated States, Original	AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
US 20040230118	A1	EN			Related to Provisional	US 2003445714
					Related to Provisional	US 2003453009
US 20040230132	A1	EN			Related to Provisional	US 2003445714
					Related to Provisional	US 2003453009
US 20040230179	A1	EN			Related to Provisional	US 2003445714
					Related to Provisional	US 2003453009
US 20040254431	A1	EN			Related to Provisional	US 2003445714
					Related to Provisional	US 2003453009
EP 1599124	A2	EN			PCT Application	WO 2004US3807
					Based on OPI patent	WO 2004071279
Regional Designated States, Original	AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
US 20060217684	A1	EN			Related to Provisional	US 2003445714
					Related to Provisional	US 2003453009
					Division of application	US 2004775666
					Continuation of application	US 2004776022
US 20060217685	A1	EN			Related to Provisional	US 2003445714
					Related to Provisional	US 2003453009
					Division of application	US 2004775666

Alerting Abstract WO A2

NOVELTY - A surgical drain (10) comprises an elongated conduit (42), a first sensing system configured to sense a physiological property of tissue proximate to a first surface of the conduit, and a second sensing system configured to sense the same physiological property of tissue proximate to a second surface of the conduit.

DESCRIPTION - A surgical drain comprises an elongated conduit configured to be implanted in and to drain fluid from a body cavity (102), the elongated conduit including a first surface located on an outer side of the elongated conduit and a second surface located on an outer side of the elongated conduit that is opposite of the first surface; a first sensing system configured to sense a physiological property of tissue proximate to the first surface; and a

second sensing system configured to sense the same physiological property of tissue proximate to the second surface.

USE - The invention is used to monitor the condition of a tissue in a body cavity (claimed) after trauma or surgical manipulation.

ADVANTAGE - The invention is positionable and removable with minimal effort, minimally invasive and causes minimal discomfort for the patient, provides continuous current information about tissue or organ condition, provides direct information about tissue or organ condition, and provides feedback on the effects of interventions such as medications or other procedures to improve tissue or organ condition.

DESCRIPTION OF DRAWINGS - The figure shows a schematic diagram of the surgical drain.

10 Surgical drain

12 Sensor

18 Display

34 Drain holes

42 Conduit

102 Body cavity

**Title Terms /Index Terms/Additional Words:** SURGICAL; DRAIN; MONITOR; CONDITION; TISSUE; BODY; CAVITY; AFTER; TRAUMA; MANIPULATE; ELONGATE; CONDUIT; TWO; SENSE; SYSTEM

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-0001/00	A	I		R	20060101
A61B-0010/00	A	I		R	20060101
A61B-0005/00	A	I		R	20060101
A61B-0008/00	A	I		R	20060101
A61M-0001/00	A	I		R	20060101
A61M-0027/00	A	I		R	20060101
A61M-0027/00	A	I	F	B	20060101
A61B	S	I		R	20060101
A61B-0001/00	C	I		R	20060101
A61B-0010/00	C	I		R	20060101
A61B-0005/00	C	I		R	20060101
A61B-0008/00	C	I		R	20060101
A61M-0001/00	C	I		R	20060101
A61M-0027/00	C	I		R	20060101

US Classification, Issued: 604541000, 600441000, 604541000, 600562000, 600309000, 604541000, 600327000, 604541000, 604541000

File Segment: CPI; EngPI; EPI

DWPI Class: B04; S05; P31; P34

Manual Codes (EPI/S-X): S05-B09; S05-D01G; S05-D01J

Manual Codes (CPI/A-N): B04-F01; B11-C04; B12-K04A

25/5/8 (Item 7 from file: 350) [Links](#)

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0010730616 *Drawing available*

WPI Acc no: 2001-342382/200136

XRPX Acc No: N2001-247896

**Flow restrictor device to measure respiratory parameters, has breathing tube and flow restrictor to make flow laminar and pressure sensor tubes connected transducer to measure flow rate of breath**

Patent Assignee: HARVARD COLLEGE (HARD)

Inventor: GAZULA G K M; GODLESKI J J

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6224560	B1	20010501	US 1998151914	A	19980911	200136	B

Priority Applications (no., kind, date): US 1998151914 A 19980911

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 6224560	B1	EN	16	9	

**Alerting Abstract US B1**

**NOVELTY** - The device has breathing tube (10) first preselected diameter and preselected length. A flow restrictor (20) has an opening (23) having second preselected diameter positioned inside the breathing tube. the first and second diameter and length of breathing tube or selected such that flow within the breathing tube is laminar.

**DESCRIPTION** - The device has pressure sensor tube (25) positioned adjacent to the first end (21) of flow restrictor (20) to detect first pressure. A second pressure sensor (30) is positioned adjacent to second end (22) flow restrictor to detect second pressure. A pressure transducer (35) is connected to sensor tubes to determine difference between first and second pressure. The difference indicates the volume flow rate of breath in the breathing tube. A data acquisition system (40) is connected to transducer to analyze pressure data to determine volume flow rate of respiration in breathing tube. An **INDEPENDENT CLAIM** is also included for method of measuring respiratory parameters.

**USE** - Used in medical devices to **measure lung** function by **monitoring** respiratory patterns.

**ADVANTAGE** - Provides precision data for accurate measure of number of pulmonary function parameters. Works independently of the position of the subject. The device is much smaller and can be used on patient at bed side, including those who are anesthetized, unconscious, or otherwise non-responsive.

**DESCRIPTION OF DRAWINGS** - The figure shows the schematic diagram of flow restrictor and data acquisition system.

10 Breathing tube

20 Flow restrictor

21 First end  
 22 Second end  
 23 Opening  
 25 Pressure sensor tube  
 30 Pressure sensor  
 35 Pressure transducer  
 40 Data acquisition system

**Title Terms /Index Terms/Additional Words:** FLOW; RESTRICT; DEVICE; MEASURE; RESPIRATION; PARAMETER; BREATH; TUBE; LAMINA; PRESSURE; SENSE; CONNECT; TRANSDUCER; RATE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/08			Main		"Version 7"

US Classification, Issued: 600538000, 600529000, 600300000, 128128000, 128204230

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01C1

25/5/12 (Item 11 from file: 350) [Links](#)

Derwent WPIX

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0007364782

WPI Acc no: 1995-177629/199523

XRAM Acc no: C1995-082279

XRFX Acc No: N1995-139464

**Flow through pressure sensor partic for kidney dialysis procedures - has pressure sensor sandwiched between two seals and clamped between housing on side of conduit and in fluid communication with it**

Patent Assignee: HONEYWELL INC (HONE)

Inventor: COOK J D

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5410916	A	19950502	US 1994265472	A	19940624	199523	B

Priority Applications (no., kind, date): US 1994265472 A 19940624

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
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US 5410916	A	EN	10	4	
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#### Alerting Abstract US A

A pressure sensor has a connecting second conduit (20) passing through a boss (14) on the wall of a first conduit (10) and a housing (30) clamped to the boss so that a pressure sensing element (60) carried on the housing communicates with the first conduit. The element is sandwiched between two seals (50, 70) which are compressed by the clamping of the housing. Electrical leads (40) from the element pass out through the housing. An electrically insulating coating is applied to the element between it and the seal adjacent the housing.

USE - Flowthrough pressure sensor for measuring bodily fluids, partic. for use in kidney dialysis procedures.

ADVANTAGE - Transducer avoids crevices and small spaces where bacteria laden material can accumulate and is mfd. using materials approved by US Federal Food and Drug Administration.

**Title Terms /Index Terms/Additional Words:** FLOW; THROUGH; PRESSURE; SENSE; KIDNEY; DIALYSE; PROCEDURE; SANDWICH; TWO; SEAL; CLAMP; HOUSING; SIDE; CONDUIT; FLUID; COMMUNICATE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G01L-0019/00	A	I		R	20060101
G01L-0009/00	A	I		R	20060101
G01L-0019/00	C	I		R	20060101
G01L-0009/00	C	I		R	20060101

US Classification, Issued: 073706000, 073756000, 073431000, 128748000

File Segment: CPI; EPI

DWPI Class: A96; B07; S02; S05

Manual Codes (EPI/S-X): S02-F04B1; S05-D01B1; S05-D01X

Manual Codes (CPI/A-N): A12-V02; A12-V03D; B11-C08; B12-K04A

25/5/13 (Item 12 from file: 350) [Links](#)

Derwent WPIX

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0007074652 *Drawing available*

WPI Acc no: 1995-098521/199513

Related WPI Acc No: 2004-675662

XRPX Acc No: N1995-077819

**Temperature-based blood flow determining method used in living body - using differential temperature measurements before and after known change of thermal energy level, at site in blood flow path**



Patent Assignee: BOWMAN H F (BOWM-I); THERMAL TECHNOLOGIES INC (THER-N)  
Inventor: BOWMAN H F

Patent Family ( 15 patents, 18 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1995005115	A2	19950223	WO 1994US9064	A	19940811	199513	B
WO 1995005115	A3	19950413	WO 1994US9064	A	19940811	199614	E
EP 712290	A1	19960522	EP 1994925821	A	19940811	199625	E
			WO 1994US9064	A	19940811		
CA 2144600	A	19960915	CA 2144600	A	19950314	199703	NCE
JP 9501591	W	19970218	WO 1994US9064	A	19940811	199717	E
			JP 1995507066	A	19940811		
US 5692514	A	19971202	US 1993106068	A	19930813	199803	E
			US 1995449205	A	19950524		
US 5797398	A	19980825	US 1993106068	A	19930813	199841	E
US 6165132	A	20001226	US 1993106068	A	19930813	200103	E
			US 1997946367	A	19971007		
US 6203501	B1	20010320	US 1993106068	A	19930813	200118	E
			US 1997946366	A	19971007		
US 20010000792	A1	20010503	US 1993106068	A	19930813	200126	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
US 6565516	B2	20030520	US 1993106068	A	19930813	200336	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
US 20030120162	A1	20030626	US 1993106068	A	19930813	200343	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
			US 2003364773	A	20030211		
JP 2004195251	A	20040715	JP 1995507066	A	19940811	200446	E
			JP 200465117	A	20040309		
JP 3557211	B2	20040825	WO 1994US9064	A	19940811	200456	E
			JP 1995507066	A	19940811		
US 6913576	B2	20050705	US 1993106068	A	19930813	200544	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
			US 2003364773	A	20030211		

Priority Applications (no., kind, date): US 2003364773 A 20030211; US 2000733595 A 20001208; US 1997946367 A 19971007; US 1997946366 A 19971007; US 1995449205 A 19950524; CA 2144600 A 19950314; US 1993106068 A 19930813

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1995005115	A2	EN	47	10		
National Designated States,Original	CA JP					
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
WO 1995005115	A3	EN				
EP 712290	A1	EN	47	10	PCT Application	WO 1994US9064
					Based on OPI patent	WO 1995005115
Regional Designated States,Original	DE FR GB					
CA 2144600	A	EN				
JP 9501591	W	JA	35		PCT Application	WO 1994US9064
					Based on OPI patent	WO 1995005115
US 5692514	A	EN	16	10	Division of application	US 1993106068
US 6165132	A	EN			Division of application	US 1993106068
					Division of patent	US 5797398
US 6203501	B1	EN			Division of application	US 1993106068
US 20010000792	A1	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Division of patent	US 5797398
					Division of patent	US 6203501
US 6565516	B2	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Division of patent	US 5797398
					Division of patent	US 6203501
US 20030120162	A1	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Continuation of application	US 2000733595
					Division of patent	US 5797398
					Division of patent	US 6203501
JP 2004195251	A	JA	20		Division of application	JP 1995507066
JP 3557211	B2	JA	14		PCT Application	WO 1994US9064
					Previously issued patent	JP 09501591
					Based on OPI patent	WO 1995005115
US 6913576	B2	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Continuation of application	US 2000733595
					Division of patent	US 5797398
					Division of patent	US 6203501
					Continuation of patent	US 6565516

### Alerting Abstract WO A2

The method involves changing the thermal energy level by a predetermined amount at a site in a blood flow path. Temperatures at an upstream and a downstream location are detected. The temperature difference at one energy level is determined initially.

The energy level is changed and the resulting temperature difference determined. The blood flow is calculated as a function of the known energy level change and the two temperature differences. The first location is thermally isolated from the thermal energy changes occurring at the site. The blood flow path includes part of the heart and the blood flow represents cardiac output.

ADVANTAGE - Uses differential measurement technique to eliminate effect of thermal fluctuations, permitting use of minimal thermal input and allowing frequent or continuous measurements to be performed.

**Title Terms /Index Terms/Additional Words:** TEMPERATURE; BASED; BLOOD; FLOW; DETERMINE; METHOD; LIVE; BODY; DIFFERENTIAL; MEASURE; AFTER; CHANGE; THERMAL; ENERGY; LEVEL; SITE; PATH

### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; A61B-005/02; A61B-005/026; A61B-005/028			Main		"Version 7"
G01F-001/68; G01F-001/684; G01F-001/69; G01K-007/22; G01K-007/24			Secondary		"Version 7"

US Classification, Issued: 600505000, 600505000, 128691000, 128692000, 128713000, 128692000, 128713000, 128736000, 600505000, 600526000, 600505000, 600526000, 600505000, 600526000, 600505000, 600526000

File Segment: EngPI; EPI;

DWPI Class: S02; S05; P31

Manual Codes (EPI/S-X): S02-C01B7; S05-D01B1; S05-D01E

25/5/15 (Item 14 from file: 350) [Links](#)

Derwent WPIX

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0006648547 *Drawing available*

WPI Acc no: 1994-025811/199403

XRPX Acc No: N1994-020137

**System for detecting relative disposition of multi-electrode catheter - uses two electrode sets located on catheter to produce sensing output corresp to measure of local tissue impedance**

Patent Assignee: AMERICAN CARDIAC ABLATION CO INC (AMCA-N)

Inventor: NARDELLA P C

Patent Family ( 4 patents, 20 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1994000050	A1	19940106	WO 1993US5782	A	19930616	199403	B
US 5341807	A	19940830	US 1992906529	A	19920630	199434	E
EP 648087	A1	19950419	EP 1993916580	A	19930616	199520	E
			WO 1993US5782	A	19930616		
JP 8505291	W	19960611	WO 1993US5782	A	19930616	199648	E
			JP 1994502443	A	19930616		

Priority Applications (no., kind, date): US 1992906529 A 19920630

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1994000050	A1	EN	16	5		
National Designated States,Original	CA JP					
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
US 5341807	A	EN	10	5		
EP 648087	A1	EN	16	5	PCT Application	WO 1993US5782
					Based on OPI patent	WO 1994000050
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
JP 8505291	W	JA	20		PCT Application	WO 1993US5782
					Based on OPI patent	WO 1994000050

Alerting Abstract WO A1

The system comprises a signal application device and a sensing output combiner. The signal application device applies a sensing signal for propagation between two electrode sets (13) disposed along a multi-electrode catheter. A sensing output is produced of each electrode set corresponding to a measure of local tissue impedance pathways. The sensing output combiner combines the sensing output of each of the two electrode sets into a differential signal. The sensing output combiner normalises a value of a sensing output based on electrode geometry to normally produce a null signal.

ADVANTAGE - Provides catheter system useful for mapping and ablation of tissue.

Title Terms /Index Terms/Additional Words: SYSTEM; DETECT; RELATIVE; DISPOSITION; MULTI; ELECTRODE; CATHETER; TWO; SET; LOCATE; PRODUCE; SENSE; OUTPUT; CORRESPOND; MEASURE; LOCAL; TISSUE; IMPEDANCE

Class Codes

**International Patent Classification**

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/39; A61B-005/02; A61B-005/04			Main		"Version 7"
A61B-005/0402; A61B-005/0408; A61B-005/0478; A61B-005/0492			Secondary		"Version 7"

US Classification, Issued: 128642000, 606038000, 606041000, 607116000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-A02; S05-B03; S05-D01A1

25/5/16 (Item 15 from file: 350) [Links](#)

Derwent WPIX

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0006467620 *Drawing available*

WPI Acc no: 1993-272495/199334

XRPX Acc No: N1993-209341

**Laser catheter with movable integral fixation wire for irradiating myocardial tissue - uses fixation wire containing temp sensors to measure distal temp and has tip member supporting optical fibre and fixation wire**

Patent Assignee: ANGEION CORP (ANGE-N); ANGELASE INC (ANGE-N)

Inventor: BRUCKER G G; SAVAGE S D

**Patent Family ( 2 patents, 19 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1993015676	A1	19930819	WO 1993US1060	A	19930205	199334	B
US 5423805	A	19950613	US 1992831539	A	19920205	199529	E
			US 199332473	A	19930315		

Priority Applications (no., kind, date): US 1992831539 A 19920205; US 199332473 A 19930315

**Patent Details**

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 1993015676	A1	EN	20	6	
National Designated States, Original	CA JP				
Regional Designated	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE				

States,Original						
US 5423805	A	EN	11	6	Continuation of application	US 1992831539

#### Alerting Abstract WO A1

The laser ablation catheter (10) comprises a catheter body, an optical fibre, a fixation wire and a tip member (24). The catheter body is formed from flexible material and has a proximal end and distal end. The optical fibre is located within the catheter body and is coupled to a laser generator at the proximal end. The fixation wire has a proximal end and a distal end slidably attached to the catheter body.

A number of temperature sensors are attached to the distal end of the fixation wire. The tip member has a first passageway which supports the optical fibre and a second passageway in which the fixation wire is slidingly aligned. **USE/ADVANTAGE** - Transfer of laser energy from a laser generator to **tissue** to be ablated. **Monitors** damage created by laser radiation. Utilises guiding/fixation wire having temperature monitoring sensors located at the distal tip to maximise use of the cross-sectional area of the catheter body.

**Title Terms /Index Terms/Additional Words:** LASER; CATHETER; MOVE ; INTEGRAL; FIX; WIRE; IRRADIATE; MYOCARDIUM; TISSUE; CONTAIN; TEMPERATURE; SENSE; MEASURE; DISTAL; TIP; MEMBER; SUPPORT; OPTICAL; FIBRE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-0017/00	A	N		R	20060101
A61B-0018/00	A	N		R	20060101
A61B-0018/24	A	I		R	20060101
A61B-0017/00	C	N		R	20060101
A61B-0018/00	C	N		R	20060101
A61B-0018/20	C	I		R	20060101

US Classification, Issued: 606015000, 606007000, 606016000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; V07; P31

Manual Codes (EPI/S-X): S03-B01A; S05-B01; S05-B04; S05-D01E; V07-N

25/5/19 (Item 18 from file: 350) [Links](#)

Derwent WPIX

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0002961807

WPI Acc no: 1984-044213/198408

XRAM Acc no: C1984-018494

XRPX Acc No: N1984-033597

**Optical fibre sensor for catheters and endoscopes - has dia. reduced by surrounding image fibre with transmission tube**

Patent Assignee: SUMITOMO ELECTRIC IND CO (SUME)

Inventor: KIMIZO O; KOICHI T O; MITSURU N; NISHIKAWA M; ONO K; TSUNO K

Patent Family ( 12 patents, 8 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 100517	A	19840215	EP 1983107346	A	19830726	198408	B
AU 198317425	A	19840202				198412	E
US 4784144	A	19881115	US 1987115644	A	19871026	198848	E
CA 1255938	A	19890620				198931	E
JP 59024805	A	19840208	JP 1982134055	A	19820731	199040	E
			JP 198329963	A	19830223		
			JP 198330579	A	19830224		
			JP 198339683	A	19830309		
			JP 198340540	A	19830318		
			JP 198358423	A	19830401		
			JP 198368860	A	19830419		
JP 59154420	A	19840903	JP 1982134055	A	19820731	199040	E
			JP 198329963	A	19830223		
			JP 198330579	A	19830224		
			JP 198339683	A	19830309		
			JP 198340540	A	19830318		
			JP 198358423	A	19830401		
			JP 198368860	A	19830419		
JP 59155824	A	19840905	JP 1982134055	A	19820731	199040	E
			JP 198329963	A	19830223		
			JP 198330579	A	19830224		
			JP 198339683	A	19830309		
			JP 198340540	A	19830318		
			JP 198358423	A	19830401		
			JP 198368860	A	19830419		
JP 59164516	A	19840917	JP 1982134055	A	19820731	199040	E
			JP 198329963	A	19830223		
			JP 198330579	A	19830224		
			JP 198339683	A	19830309		
			JP 198340540	A	19830318		
			JP 198358423	A	19830401		
			JP 198368860	A	19830419		
JP 59182407	A	19841017	JP 1982134055	A	19820731	199040	E
			JP 198329963	A	19830223		
			JP 198330579	A	19830224		

			JP 198339683	A	19830309		
			JP 198340540	A	19830318		
			JP 198358423	A	19830401		
			JP 198368860	A	19830419		
JP 59195215	A	19841106	JP 1982134055	A	19820731	199040	E
			JP 198329963	A	19830223		
			JP 198330579	A	19830224		
			JP 198339683	A	19830309		
			JP 198340540	A	19830318		
			JP 198358423	A	19830401		
			JP 198368860	A	19830419		
EP 100517	B	19901227	EP 1983107346	A	19830726	199101	E
DE 3382085	G	19910207				199107	E

Priority Applications (no., kind, date): JP 198358423 A 19830401; JP 198340540 A 19830318; JP 198340540 U 19830318; JP 198339683 A 19830309; JP 198330579 A 19830224; JP 198329963 A 19830223; JP 1982134055 A 19820731; JP 198368860 A 19830419

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
EP 100517	A	EN	57	5	
Regional Designated States,Original	DE FR GB IT NL				
CA 1255938	A	EN			
EP 100517	B	EN			
Regional Designated States,Original	DE FR GB IT NL				

#### Alerting Abstract EP A

Sensor has first light transmission path surrounding a second, the sensor pref. comprising a transparent plastic tube, most pref. of PMMA, polycarbonate, or polystyrene, for transmitting illuminating light enclosing a light, most pref. image, receiving optical fibre provided with an outer peripheral light-absorbing layer. Pref. the tube contains a fluid passageway also and is clad with a material of lower refractive index, most pref. a fluororesin.

Pref. the optical fibre has an optical lens at its front end for introducing light, the lens being coupled by means of a cylindrical sleeve to form a sub-assembly, an image pickup lens being disposed on an axial line at its distal end disposed in a rigid cylindrical sleeve forming a further sub-assembly. The second light transmission path may branch from the first through a hole formed in its sidewall. Pref. the fluid passageway is coupled to a tube for supplying liquid.

Optical fibre sensor can be incorporated in image catheter or blood-vesselheart endoscope, endoscope for dental, ophthalmic, otorhinolaryngologic, and urinologic services, sensor for **measuring** SO<sub>2</sub> and **heart** pulsations, and spectroanalytical sensor for medical and industrial use. By contg. the imaging optical fibre and fluid passageway within the light transmission tube, the sensor may be made as small as 2.3 mm. dia.

**Title Terms /Index Terms/Additional Words:** OPTICAL; FIBRE; SENSE ; CATHETER; ENDOSCOPE;



DIAMETER; REDUCE; SURROUND; IMAGE; TRANSMISSION; TUBE; PMMA; METHYL;  
POLYMETHACRYLATE; POLYCARBONATE; POLYSTYRENE

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-001/00			Main		"Version 7"
A61B-001/06; A61B-001/12; G02B-023/00; G02B-027/02; G02B-027/10; G02B-005/14; G02B-005/17; G02B-007/26			Secondary		"Version 7"

US Classification, Issued: 128634000, 128006000, 385117000, 385126000

File Segment: CPI; EngPI; EPI

DWPI Class: A96; S05; P31

Manual Codes (EPI/S-X): S05-D04

Manual Codes (CPI/A-N): A04-C02E; A04-F06E; A05-E06; A12-L03; A12-V03B

17/5/1 (Item 1 from file: 347) Links

JAPIO

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08765251 \*\*Image available\*\*

## INDOCYANINE GREEN QUANTITATIVE CATHETER SYSTEM

**Pub. No.:** 2006-158611 [JP 2006158611 A ]

**Published:** June 22, 2006 (20060622)

**Inventor:** MIYAGAWA ATSUO

DOI MATSUYUKI

YAMAMOTO SEIJI

TERAKAWA SUSUMU

**Applicant:** HAMAMATSU UNIV SCHOOL OF MEDICINE

**Application No.:** 2004-353711 [JP 2004353711]

**Filed:** December 07, 2004 (20041207)

**International Patent Class (v8 + Attributes)**

**IPC + Level Value Position Status Version Action Source Office:**

A61B-0005/0275	A	I	F	B	20060101	20060526	H	JP
A61B-0001/00	A	I	L	B	20060101	20060526	H	JP
G01N-0021/47	A	I	L	B	20060101	20060526	H	JP
G01N-0021/64	A	I	L	B	20060101	20060526	H	JP

### ABSTRACT

**PROBLEM TO BE SOLVED:** To provide a small-size, simple and convenient indocyanine green quantitative catheter system executing a real-time and precise monitor of the reflection intensity of ICG (indocyanine green), and providing data of blood flow rate, the amount of circulating blood or the excretory function of the liver without causing a new invasion in a system using a catheter having an optical fiber.

**SOLUTION:** The distal end of the optical fiber catheter 18 is connected to an optical connector 1 and the two optical fiber ends are connected to a light receiving optical system and a light source optical system respectively. The optical fibers are optically connected to the light source for measuring oxygen saturation and a detecting part by dichroic mirrors 20 and 21. One wavelength laser beams of 808 nm sent from the light source 12 is absorbed by ICG, which is administered near the distal end of the catheter, and detected by the detector 5, and its reflection intensity is measured by a control part 7. The data such as the blood flow rate and the amount of circulating blood are calculated based on the reflection intensity and displayed on a monitor 8.

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17/5/2 (Item 1 from file: 350) [Links](#)

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0015443931 *Drawing available*

WPI Acc no: 2005-793589/200581

XRPX Acc No: N2005-657295

**Tubal sterilization device for occluding female reproductive fallopian tube, has electrodes that are provided with radio frequency energy to heat tissue of fallopian tube, and sensor measuring temperature of heated tissue**

Patent Assignee: ETHICON INC (ETHI); RYAN T P (RYAN-I); SIMPSON R (SIMP-I); ZADDEM V (ZADD-I)

Inventor: RYAN T P; SIMPSON R; ZADDEM V

Patent Family ( 2 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6964274	B1	20051115	US 2004862209	A	20040607	200581	B
US 20050268918	A1	20051208	US 2004862209	A	20040607	200581	E

Priority Applications (no., kind, date): US 2004862209 A 20040607

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 6964274	B1	EN	29	20	

#### Alerting Abstract US B1

**NOVELTY** - The device has a catheter (2) defining an interior passageway, and a distal end for insertion transcervically into a patient. A proximal end is opposite to the distal end. Electrodes (12, 14) are mounted on the distal end, and radially move with respect to the distal end. The electrodes are provided with radio frequency energy to heat a tissue of a fallopian tube. A sensor measures the temperature of the heated tissue.

**DESCRIPTION** - An INDEPENDENT CLAIM is also included for a method of applying heat by using radio frequency energy to a portion of a fallopian tube of a patient.

**USE** - Used for occluding a female reproductive fallopian tube.

**ADVANTAGE** - The sterilization device effectively stretches the tissue of the fallopian tube, thus reducing risk of perforation, and hence localizing heat of the surrounding tissue when radio frequency energy is applied to the electrodes. A sensor measures the temperature of the heated tissue, thus controlling the power of the radio frequency signal applied to the electrodes.

**DESCRIPTION OF DRAWINGS** - The drawing shows an isometric view of a cut away portion of a tubal sterilization device.

2 Catheter

8 Push rod

12, 14 Electrodes

40, 42 Pivot arm

46 Protrusions

**Title Terms /Index Terms/Additional Words:** TUBE; STERILE; DEVICE ; OCCLUDE; FEMALE; REPRODUCE; FALLOPIAN; ELECTRODE; RADIO; FREQUENCY; ENERGY; HEAT; **TISSUE**; SENSE; MEASURE; TEMPERATURE

**Class Codes**

**International Patent Classification**

IPC	Class Level	Scope	Position	Status	Version Date
A61F-006/06			Main		"Version 7"

US Classification, Issued: 128832000, 128830000, 128831000, 128830000, 128831000, 128898000, 600029000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P32

Manual Codes (EPI/S-X): S03-B01E; S05-B03

17/5/3 (Item 2 from file: 350) [Links](#)

Derwent WPIX

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0015138420 *Drawing available*

WPI Acc no: 2005-487977/200549

Related WPI Acc No: 1996-286941; 1996-455025; 1997-051955; 1997-332568; 1997-470501; 1998-466536; 1998-541600; 2001-315823; 2001-535567; 2003-289647

XRAM Acc no: C2005-148687

XRPX Acc No: N2005-397381

**Anchoring of balloon catheter in patient comprises positioning balloon catheter in patient's body passageway, advancing balloon in patient, and inflating balloon after advancing step**

Patent Assignee: FAN S W (FANS-I); MUELLER R L (MUEL-I); SNOW D W (SNOW-I); VALLEY K L (VALL-I)

Inventor: FAN S W; MUELLER R L; SNOW D W; VALLEY K L

**Patent Family ( 1 patents, 1 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20050148997	A1	20050707	US 1991730559	A	19910716	200549	B
			US 1992991188	A	19921215		
			US 1993123411	A	19930917		
			US 1993162742	A	19931203		
			US 1994282192	A	19940728		
			US 1995486216	A	19950607		
			US 1995570286	A	19951211		
			US 1998114307	A	19980713		

			US 2001759431	A	20010112		
			US 200557544	A	20050214		

Priority Applications (no., kind, date): AU 19926170 A 19921203

Patent Details							
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes		
US 20050148997	A1	EN	73	49	C-I-P of application	US 1991730559	
					C-I-P of application	US 1992991188	
					C-I-P of application	US 1993123411	
					C-I-P of application	US 1993162742	
					C-I-P of application	US 1994282192	
					C-I-P of application	US 1995486216	
					Division of application	US 1995570286	
					Continuation of application	US 1998114307	
					Continuation of application	US 2001759431	
					C-I-P of patent	US 5370685	
					C-I-P of patent	US 5584803	
					C-I-P of patent	US 5766151	
					Division of patent	US 5795325	
					Continuation of patent	US 6251093	

#### Alerting Abstract US A1

**NOVELTY** - A balloon catheter is anchored in patient by positioning balloon catheter in patient's body passageway, advancing balloon in patient to a position to be occluded with the balloon in collapsed shape, and inflating the balloon after advancing step so that high friction portion contacts the patient's body passageway.

**DESCRIPTION** - The anchoring of balloon catheter (170) in patient involves positioning the balloon (172) in the patient's body passageway with the balloon in the collapsed shape so that the radially outward extremes contact the body passageway; advancing the balloon in the patient to a position to be occluded with the balloon in the collapsed shape; and inflating the balloon after the advancing step so that the high friction portion contacts the patient's body passageway for anchoring the balloon in the patient's body passageway.

**INDEPENDENT CLAIMS** are also included for:

1. a balloon catheter for occluding a body passageway in a patient, comprising shaft; and balloon mounted to the shaft, the balloon having an expanded shape and a collapsed shape, the expanded shape being configured to occlude a body passageway in a patient, the balloon including an outer surface having  $\geq 2$  high friction portions and a low friction portion, the low friction portion having a lower coefficient of friction than the high friction portions relative to the patient's body passageway, the balloon having  $\geq 2$  high friction portions and a low friction portion, the low friction portion having a lower coefficient of friction than the high friction portions relative to the patient's body passageway, the balloon having  $\geq 3$  radially extending arms when in the collapsed shape, each of low friction portions being positioned at radially outward extremes of adjacent radially

2. a method for positioning balloon in passageway and occluding the passageway, comprising providing catheter having shaft and balloon mounted to shaft; inserting the catheter into body passageway of patient with the balloon in the collapsed shape; positioning the catheter in a portion of the body passageway for occluding the portion of the body passageway; inflating the balloon with a fluid; monitoring a rate of pressure increase in the balloon with respect to a fluid volume in the balloon; and adding an amount of fluid after the rate of pressure increase in the balloon exceeds a predetermined threshold; and
3. a device for pressurizing balloon catheter, comprising catheter having shaft and balloon; fluid source coupled to the first lumen for inflating the balloon; pressure sensor configured to measure a pressure in an interior of the balloon; and pressure monitor coupled to the pressure sensor, the pressure monitor determining when a rate of pressure increase in the balloon with respect to an increase in fluid volume in the balloon exceeds a predetermined threshold.

USE - Used in anchoring of balloon catheter in patient for preparing patient's heart for cardiac procedures.

ADVANTAGE - The invention does not require invasive thoracotomy.

DESCRIPTION OF DRAWINGS - The figure illustrates an endoaortic partitioning catheter having steerable distal tip with a multichamber balloon for centering the catheter tip within ascending aorta.

170 Catheter

171 Distal tip

172 Balloon

173 Distal portion

174 First chamber

175 Second chamber

176 First lumen

177 Second lumen

178 First port

179 Second port

181 Infusion lumen

182 Infusion port

**Title Terms /Index Terms/Additional Words:** ANCHOR; BALLOON; CATHETER; PATIENT; COMPRISE; POSITION; BODY; PASSAGE; ADVANCE; INFLATE; AFTER; STEP

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61M-029/00			Main		"Version 7"

US Classification, Issued: 604509000, 604096010

File Segment: CPI; EngPI

DWPI Class: B07; P34

Manual Codes (CPI/A-N): B11-C04B; B11-C09

17/5/4 (Item 3 from file: 350) [Links](#)

Derwent WPIX

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0015067831 *Drawing available*

WPI Acc no: 2005-417067/200542

XRAM Acc no: C2005-127738

XRPX Acc No: N2005-338315

**Pulmonary artery catheter for detecting oxygen consumption in the heart, includes thermistor, two oxygen sensors positioned within patient's pulmonary artery and right atrium or superior vena cava, and microprocessor**

Patent Assignee: GUTIERREZ G (GUTI-I)

Inventor: GUTIERREZ G

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20050124872	A1	20050609	US 2003520280	P	20031114	200542	B
			US 2004987505	A	20041112		

Priority Applications (no., kind, date): US 2003520280 P 20031114; US 2004987505 A 20041112

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20050124872	A1	EN	8	6	Related to Provisional	US 2003520280

**Alerting Abstract US A1**

**NOVELTY** - Pulmonary artery catheter includes thermistor for measuring blood temperatures and determining cardiac output, a first oxygen sensor (48) positioned within a patient's pulmonary artery (22), a second oxygen sensor (52) positioned within a patient's right atrium (46) or superior vena cava, and a microprocessor coupled to the sensors and calculates rate of oxygen consumption in the heart.

**DESCRIPTION** - Pulmonary artery catheter comprises an elongated flexible tube (24) having an inflatable balloon (28) at a distal end (32), and a syringe positioned at a proximal end of the tube. The syringe allows operator to inflate the balloon to allow the catheter to be pulled through the patient's venous system. A thermistor is proximal to the balloon, measures blood temperatures, and determines cardiac output. A first oxygen sensor is adjacent to the distal end of the tube. It is positioned within a patient's pulmonary artery. A second oxygen sensor is positioned proximal to the first oxygen sensor. It is positioned within a patient's right atrium or superior vena cava. The two sensors comprise a series of light emitting diodes and a photodetector. They determine blood oxygen content by measuring the blood's absorption of infrared light. A microprocessor is coupled to the two sensors. It implements an algorithm so that the rate of oxygen consumption in the heart is calculated as a function of the difference between blood oxygen content as measured by the two oxygen sensors and the cardiac output as determined by the thermistor.

An **INDEPENDENT CLAIM** is also included for a system for determining myocardial oxygen consumption of the heart comprising the two oxygen sensors positioned within the respective heart's pulmonary artery and heart's right atrium or superior vena cava, and the microprocessor.

**USE** - The catheter is used in detecting rate of oxygen consumption in the heart by comparing oxygen levels in the pulmonary artery to oxygen levels in the right atrium or superior vena cava (claimed). It is used for patient diagnosis

and hemodynamic and therapeutic monitoring.

ADVANTAGE - The inventive **catheter** is capable of **detecting** myocardial metabolism via the differential measurement of oxygen consumption in the atrial and mixed venous blood.

DESCRIPTION OF DRAWINGS - The figure is a partial cross sectional view of the catheter positioned within the right atrium and pulmonary artery of the human **heart**.

22 Pulmonary artery

24 Flexible tube

28 Balloon

32 Distal end

46 Right atrium

48 First oxygen sensor

52 **Second oxygen sensor**

**Title Terms /Index Terms/Additional Words:** PULMONARY; ARTERY; CATHETER; DETECT; OXYGEN; CONSUME; **HEART**; THERMISTOR; TWO; SENSE; POSITION; PATIENT; RIGHT; ATRIUM; SUPERIOR; VENA; CAVA; MICROPROCESSOR

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"
A61B-005/02			Secondary		"Version 7"

US Classification, Issued: 600325000, 600549000, 600316000

File Segment: CPI; EngPI; EPI

DWPI Class: B04; S03; S05; T01; P31

Manual Codes (EPI/S-X): S03-B01F; S03-E04A5B; S03-E04A5L; S05-D01B1B; S05-D01G; T01-J06A; T01-S01C

Manual Codes (CPI/A-N): B04-B04D; B11-C04B; B11-C08; B12-K04

17/5/5 (Item 4 from file: 350) [Links](#)

Derwent WPIX

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0014169375 *Drawing available*

WPI Acc no: 2004-354508/

XRAM Acc no: C2004-134995

XRPX Acc No: N2004-283198

**Therapeutic medical device, i.e. catheter, for performing thermal and laser Doppler velocimetry measurements, has optical fiber longitudinally to perform laser Doppler velocimetry and temperature measurement of fluid within body lumen**

Patent Assignee: ADVANCED CARDIOVASCULAR SYSTEM (ADCA-N)



Inventor: AINSWORTH R D; ELLIS J T; HURLEY B A; KILPATRICK D; LEE J S

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6716178	B1	20040406	US 2001872299	A	20010531	200433	B

Priority Applications (no., kind, date): US 2001872299 A 20010531

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 6716178	B1	EN	19	8	

Alerting Abstract US B1

NOVELTY - A therapeutic medical device (10) for performing thermal and laser Doppler velocimetry measurements, comprises elongated member (12); a first optical fiber (30) longitudinally disposed through the elongated member to perform laser Doppler velocimetry measurement of a fluid within the body lumen; and a second optical fiber (40) longitudinally disposed through elongated member to perform a temperature measurement within the body lumen.

DESCRIPTION - INDEPENDENT CLAIMS are also included for:

4. a system for performing thermal and laser Doppler velocimetry (LDV) measurements, comprising LDV apparatus comprising a laser light source and an LDV detector coupled to a data processing system; an optical detector coupled to the data processing system; and a catheter coupled to the LDV apparatus and the optical detector, the catheter comprising an elongated shaft comprising a tubular inner member having a first lumen and an outer member disposed about the tubular inner member, the catheter further comprising first and second optical fibers longitudinally disposed through the first lumen of the tubular inner member, the first optical fiber to perform LDV measurement of a fluid within a body lumen, the second optical fiber to perform a **temperature measurement** within the body lumen; and
5. a method for performing thermal and LDV measurements, comprising inserting a therapeutic medical device into a vasculature of a patient, the device comprising an elongated member having **first and second optical** fibers, the **first optical** fiber to perform a LDP measurement of a fluid within a body lumen, **the second optical** fiber to perform a **temperature** measurement within the body lumen; advancing the therapeutic medical device to a location in the vasculature; operating a data processing system coupled to the therapeutic medical device to transmit light radiation signals to the location in the vasculature and reflected light radiation signals to a detector in the data processing system; and processing the reflected light radiation signals to perform thermal and LDP measurements.

USE - The medical device, i.e. catheter or guide wire, is for performing thermal and LDV measurements of a fluid, e.g. blood, within the body lumen (claimed).

ADVANTAGE - The device provides diagnostic and therapeutic capabilities through the use of thermal and LDV measurement capabilities. By using the device, knowledge about a given lesion's *in vivo* biological environment can be obtained and utilized to make treatment decisions prior to, during, and after intervention. Such device will provide clinicians with an enhanced set of tools with which to assess disease status in a given patient, a situation that

will inevitably lead to improvements in both acute and chronic clinical outcomes.

DESCRIPTION OF DRAWINGS - The figure is a perspective view illustrating a therapeutic medical device for performing thermal and laser Doppler velocimetry measurements.

10Therapeutic medical device

12Elongated member

30First optical fiber

40Second optical fiber

46Bragg diffraction grating

**Title Terms /Index Terms/Additional Words:** THERAPEUTIC; MEDICAL; DEVICE; CATHETER; PERFORMANCE; THERMAL; LASER; DOPPLER; MEASURE; OPTICAL; LONGITUDE; TEMPERATURE; FLUID; BODY; LUMEN

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-010/00			Main		"Version 7"

US Classification, Issued: 600504000, 600342000

File Segment: CPI; EngPI; EPI

DWPI Class: B04; S02; S03; S05; V07; W06; P31

Manual Codes (EPI/S-X): S02-C01B7; S02-G02X; S03-B01G; S05-A03A2; V07-K ; W06-A06

Manual Codes (CPI/A-N): B04-B04D5; B11-C04B; B11-C09; B12-K04A

17/5/6 (Item 5 from file: 350) [Links](#)

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0013706788 *Drawing available*

WPI Acc no: 2003-803981/200375

XRPX Acc No: N2003-644500

**Patient heart assisting method, involves inserting balloon near level of patients diaphragm, coupling balloon to extra-corporeal controller, and opening and closing of balloon in response to signals from electrodes**

Patent Assignee: FRAZIER H O (FRAZ-I); FRAZIER O H (FRAZ-I)

Inventor: FRAZIER H O; FRAZIER O H

##### Patent Family ( 5 patents, 100 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2003082379	A1	20031009	WO 2003US5259	A	20030221	200375	B
US 20030191357	A1	20031009	US 2002106744	A	20020326	200382	E
US 6669624	B2	20031230	US 2002106744	A	20020326	200402	E
US 20040015043	A1	20040122	US 2002106744	A	20020326	200407	E

			US 2003603669	A	20030625		
AU 2003213182	A1	20031013	AU 2003213182	A	20030221	200435	E

Priority Applications (no., kind, date): US 2003603669 A 20030625; US 2002106744 A 20020326

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2003082379	A1	EN	35	6		
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW					
Regional Designated States,Original	AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW					
US 20040015043	A1	EN			Division of application	US 2002106744
AU 2003213182	A1	EN			Based on OPI patent	WO 2003082379

#### Alerting Abstract WO A1

**NOVELTY** - The method involves inserting an occluding device (8) e.g. balloon, having a sensor (13), into patients descending aorta. The balloon is positioned near the level of the diaphragm. The balloon is coupled to an extra-corporeal controller (9) to continuously pump blood from supra diaphragmatic to infra-diaphragmatic artery. The balloon is opened and closed in response to signals from electro cardiogram electrodes.

**DESCRIPTION** - The extra-corporeal controller causes the balloon pump to intermittently occlude the aorta, synchronously with the patients cardiac cycle and causes the extra-corporeal pump to pump blood from the patients proximal to the distal aorta at a rate sufficient to pressure and volume unload the patient's failing left ventricle. An **INDEPENDENT CLAIM** is also included for a temporary **heart-assist** system.

**USE** - Used for mechanically assisting the failing **heart** of patients.

**ADVANTAGE** - The method reduces the workload and oxygen requirements of the acutely failing **heart**, and enhances cardiac output and systemic perfusion. The method also requires minimal surgical intervention for insertion and removal. The method allows for optimization of concomitant drug therapy and reduces additional trauma to the failing **heart** by eliminating a need for direct cannulation of left atrium or left ventricle.

**DESCRIPTION OF DRAWINGS** - The drawing shows an overview of temporary **heart-assist** system illustrating the intra-aortic balloon, aortic-aortic external bypass pump, and external controller, as installed on a patient.

7 **Heart** assist system

8 Occluding device

9 Extra-corporeal controller

10 Pump

11 Catheter

**Title Terms /Index Terms/Additional Words:** PATIENT; **HEART** ; ASSIST; METHOD; INSERT; BALLOON; LEVEL; DIAPHRAGM; COUPLE; EXTRA; CORPOREAL; CONTROL; OPEN; CLOSE; RESPOND; SIGNAL; ELECTRODE

**Class Codes****International Patent Classification**

IPC	Class Level	Scope	Position	Status	Version Date
A61M-001/10; A61M-001/12; A61N-001/362			Main		"Version 7"

US Classification, Issued: 600016000, 600018000, 600018000, 623003260, 623003280

File Segment: EngPI; EPI;

DWPI Class: S05; P34

Manual Codes (EPI/S-X): S05-F04

17/5/7 (Item 6 from file: 350) [Links](#)

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0013513919 *Drawing available*

WPI Acc no: 2003-606766/

XRPX Acc No: N2003-483788

**Respiratory gas flow measurement apparatus for respiration disorder diagnosis, has sensing rod with sampling pores formed symmetrically at locations determined by equal area division method**

Patent Assignee: CHA E J (CHAE-I); CHA U J (CHAU-I); KIM G A (KIMG-I); KIM H S (KIMH-I); KIM K A (KIMK-I)

Inventor: CHA E J; CHA U J; KIM G A; KIM H S; KIM K A

**Patent Family ( 6 patents, 95 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20030101827	A1	20030605	US 2002123115	A	20020417	200357	B
WO 2003047429	A1	20030612	WO 2002KR620	A	20020409	200357	E
KR 2003046215	A	20030612	KR 200176675	A	20011205	200370	E
US 6634242	B2	20031021	US 2002123115	A	20020417	200370	E
AU 2002307703	A1	20030617	AU 2002307703	A	20020409	200419	E
KR 432640	B	20040522	KR 200176675	A	20011205	200461	E

Priority Applications (no., kind, date): US 2002123115 A 20020417; KR 200176675 A 20011205

**Patent Details**

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes

US 20030101827	A1	EN	12	7		
WO 2003047429	A1	EN				
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW					
AU 2002307703	A1	EN			Based on OPI patent	WO 2003047429
KR 432640	B	KO			Previously issued patent	KR 2003046215

### Alerting Abstract US A1

**NOVELTY** - A respiratory tube (220) has hole (226) in which a sensing rod (240) is inserted. The rod has symmetric sampling pores and mutually separated air passages. The semicircular section of the tube is divided into annuluses with equal area by equal area division method and pores of the rod are formed at dividing locations. The pores are in communication with mutually separated air passages.

**USE** - For measuring respiratory gas flow for determining change in capacity of human lungs during respiration continuously for estimating intermediary parameters during diagnosis of respiratory disorder.

**ADVANTAGE** - Since the locations of sampling pores are determined by equal area division method, the velocity gradient is reflected best, the velocity of respiratory gas flow is optimally sampled, thus improving accuracy in measurement of respiratory gas flow. If the disposable respiratory tube assembly is replaced the apparatus can be used permanently without other reasons such as damage to measurement module. The assembly can be manufactured from plastic through injection molding thus reducing manufacturing cost. The air passages are provided so that respiratory gas can transmit kinetic energy through the air passages so as to physically equalized dynamic pressure caused by the flow velocities sampled by the pores.

**DESCRIPTION OF DRAWINGS** - The figure shows a cross- sectional view of the respiratory gas flow measurement apparatus.

220 respiratory tube

226 holes

240 sensing rod

**Title Terms /Index Terms/Additional Words:** RESPIRATION; GAS; FLOW; MEASURE; APPARATUS; DISORDER; DIAGNOSE; SENSE; ROD; SAMPLE; PORE; FORMING; SYMMETRICAL; LOCATE; DETERMINE; EQUAL; AREA; DIVIDE; METHOD

### Class Codes

#### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/087; G01F-001/46			Main		"Version 7"

US Classification, Issued: 073861660, 073861660, 073861650

File Segment: EngPI; EPI;  
DWPI Class: S02; S05; P31  
Manual Codes (EPI/S-X): S02-C01A1; S05-D01C1

17/5/8 (Item 7 from file: 350) [Links](#)

Derwent WPIX

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0012962505 *Drawing available*

WPI Acc no: 2003-039609/200303

XRPX Acc No: N2003-030971

**Thermal sensor position determining apparatus for cardiac tissue ablation system, determines temperature of each sensor relative to other sensors and displays in bar chart indicating closeness of sensors with tissue**

Patent Assignee: CARDIAC PACEMAKERS INC (CARD-N); HALL J A (HALL-I); SHERMAN M L (SHER-I); SIMPSON J A (SIMP-I); WOOD D S (WOOD-I)

Inventor: HALL J A; SHERMAN M L; SIMPSON J A; WOOD D S

Patent Family ( 2 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20020128643	A1	20020912	US 2000752782	A	20001228	200303	B
US 6752804	B2	20040622	US 2000752782	A	20001228	200442	E

Priority Applications (no., kind, date): US 2000752782 A 20001228

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 20020128643	A1	EN	39	22	

**Alerting Abstract US A1**

NOVELTY - A catheter (30) mounts an electrode device (16) including sensors (40) for positioning them close to the biological **tissue**. A processor determines temperature of each thermal sensor. The temperature of each sensor relative to temperature of the other sensors are displayed in the form of a bar chart with different temperature ranges indicating the closeness of the thermal sensors with respect to the **tissue**.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

6. Method of determining position of thermal sensors relative to biological **tissue** undergoing ablation;
7. Method of monitoring and controlling application of energy to biological **tissue** undergoing ablation; and
8. Energy application controller.

USE - Thermal sensors position determination method for **tissue** ablation system used for treating cardiac arrhythmia.

ADVANTAGE - Effectively adjusts application energy to the biological **tissue** by adjusting position of the thermal sensors based on obtained bar chart. Therefore coagulation of blood is avoided.

DESCRIPTION OF DRAWINGS - The figure shows a schematic view of the **tissue** ablation apparatus.

16 Electrode device

30 Catheter

40 Sensor

**Title Terms /Index Terms/Additional Words:** THERMAL; SENSE; POSITION; DETERMINE; APPARATUS; CARDIAC; **TISSUE**; ABLATE; SYSTEM; TEMPERATURE; RELATIVE; DISPLAY; BAR; CHART; INDICATE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/04; A61B-018/18			Main		"Version 7"

US Classification, Issued: 606034000, 606041000, 606034000, 219494000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; T01; P31

Manual Codes (EPI/S-X): S03-B01C; S03-B01E9; S05-B03; S05-B04A; T01-J06A

17/5/9 (Item 8 from file: 350) [Links](#)

Derwent WPIX

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0011176492 *Drawing available*

WPI Acc no: 2002-114302/200215

XRAM Acc no: C2002-035052

XRPX Acc No: N2002-085240

**Transdermal sampling system for monitoring health, comprises sampler for retrieving and transferring analyte obtained from the skin, detector system for identifying and quantifying analyte, and logic module**

Patent Assignee: CURRIE J F (CURR-I); DERMAL SYSTEMS INT INC (DERM-N); PARANJAPE M (PARA-I); PECK C C (PECK-I); SCHNEIDER T W (SCHN-I); SCI APPL INT CORP (SCIT-N); UNIV GEORGETOWN (GEOU); WHITE R C (WHIT-I)

Inventor: CURRIE J F; PARANJAPE M; PECK C C; SCHNEIDER T W; WHITE R; WHITE R C

##### Patent Family ( 7 patents, 93 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
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WO 2001091626	A2	20011206	WO 2001US17081	A	20010530	200215	B
AU 200165012	A	20011211	AU 200165012	A	20010530	200225	E
US 20030225362	A1	20031204	US 2000208327	P	20000601	200380	E
			US 2001866826	A	20010530		
JP 2004522460	W	20040729	JP 2001587645	A	20010530	200452	E
			WO 2001US17081	A	20010530		
US 6887202	B2	20050503	US 2000208327	P	20000601	200530	E
			US 2001866826	A	20010530		
US 20050182307	A1	20050818	US 2000208327	P	20000601	200555	E
			US 2001866826	A	20010530		
			US 200590156	A	20050328		
EP 1585423	A2	20051019	EP 2001939501	A	20010530	200568	E
			WO 2001US17081	A	20010530		

Priority Applications (no., kind, date): US 200590156 A 20050328; US 2001866826 A 20010530; US 2000208327 P 20000601

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2001091626	A2	EN	136	24		
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
Regional Designated States, Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200165012	A	EN			Based on OPI patent	WO 2001091626
US 20030225362	A1	EN			Related to Provisional	US 2000208327
JP 2004522460	W	JA	198		PCT Application	WO 2001US17081
					Based on OPI patent	WO 2001091626
US 6887202	B2	EN			Related to Provisional	US 2000208327
US 20050182307	A1	EN			Related to Provisional	US 2000208327
					Continuation of application	US 2001866826
					Continuation of patent	US 6887202
EP 1585423	A2	EN			PCT Application	WO 2001US17081
					Based on OPI patent	WO 2001091626
Regional Designated States, Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					



## **Alerting Abstract WO A2**

**NOVELTY** - A transdermal sampling system (I) comprises sampler (S) for retrieving and transferring analyte (A) obtained transdermally from the skin of a subject, detector system (DS) for identifying and quantifying (A) and logic module (103) for receiving and storing input from the subject.

**DESCRIPTION** - A transdermal sampling system (I) comprises sampler (S) for retrieving and transferring analyte (A) obtained transdermally from the skin of a subject, detector system (DS) for identifying and quantifying (A) and logic module (103) for receiving and storing input from the subject, relating input to other data from subject, displaying output, transmitting output to another system and controlling operation of (S) and DS.

**INDEPENDENT CLAIMS** are also included for:

9. a microfabricated device (II) for allowing remote monitoring of a subject, comprises (S), DS connected to (S), and a transmitter/receiver for transmitting data relating to (A) detected by DS to a logic module (LM) for processing, and for allowing control of (II) by LM;
10. a microfabricated device (III) for sampling (A) retrieved from the skin of a subject, comprises a detector chamber for receiving (A), a photonic detection system comprising a photonics source located attached to (III) in association with the detection chamber or a patch which changes color when contacted by predetermined analytes, located attached to (III) in association with the detection chamber, and detectors associated with the detection chamber for detecting (A) received in the detection chamber or for detecting a change of color of the patch indicating the presence of a predetermined analyte;
11. a microfabricated device (IV) for sampling and detecting (A) retrieved from the skin of a subject, comprises a conduit for retrieving and transmitting (A) to a detector, and a unit for enhancing permeability of the skin of a subject for retrieving (A) from it;
12. a transdermal sampling system comprising: a microfluidic assembly for retrieving and transferring at least one analyte (a) obtained transdermally from the skin; a detector system for identifying and quantifying (a); and a logic module for receiving and storing input data from one detector; relating the input data to other data obtained from the subject; displaying output information; transmitting output information to another system; and controlling the operation of sampler and detector;
13. biomedically monitoring (M) a subject's condition, by ablating a subject's skin to allow interstitial fluid to perfuse through it, collecting interstitial fluid from the subject's ablated skin, and identifying and quantifying at least one type of selected molecules contained in the collected interstitial fluid.

**USE** - (I) or (M) is useful for delivering drugs to an individual transdermally and for monitoring the health of an individual, e.g., monitoring a subject for pesticide exposure, monitoring the stress status of a war-fighter, monitoring inflammatory sequeli in response to microbial infection and monitoring stimulants such as caffeine and antihistamines.

**ADVANTAGE** - (I) or (M) is an enhanced system or method and provides integrated, cost-effective, rapid and unobtrusive assessment of a subject's medical condition.

**DESCRIPTION OF DRAWINGS** - The figure shows the schematic illustration of the overall architecture of the transdermal sampling system.

103 Logic

**Title Terms /Index Terms/Additional Words:** TRANSDERMAL; SAMPLE; SYSTEM; MONITOR; HEALTH; COMPRISE; RETRIEVAL; TRANSFER; ANALYTE; OBTAIN; SKIN; DETECT; IDENTIFY; QUANTIFICATION; LOGIC; MODULE

## Class Codes

### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B; A61B-001/00; A61B-005/00; A61N-001/30			Main		"Version 7"
G01N-001/10; G01N-033/00; G01N-033/48; G01N-033/53; G01N-037/00			Secondary		"Version 7"

US Classification, Issued: 604020000, 600306000, 073061410, 600300000, 600309000, 600317000

File Segment: CPI; EngPI

DWPI Class: B04; P31; P34

Manual Codes (CPI/A-N): B01-A01; B01-A02; B01-A03; B01-C05; B04-C01G; B04-J02; B04-N04; B11-C03; B11-C07B3; B11-C08C; B12-K04; B12-M02F

17/5/10 (Item 9 from file: 350) [Links](#)

Derwent WPIX

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0010982638 *Drawing available*

WPI Acc no: 2001-607143/

XRPX Acc No: N2001-453230

**Non-invasive measurement of multiple systemic and tissue parameters from conjunctiva applied to neonates and adults, with minimal discomfort or damage to eye using tissue parameter catheter sensor**

Patent Assignee: HARBOR-UCLA RES & EDUCATION INST (HARB-N)

Inventor: ISENBERG S J; WEISS I K

### Patent Family ( 2 patents, 91 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2001056463	A1	20010809	WO 2001US2897	A	20010126	200169	B
AU 200131224	A	20010814	AU 200131224	A	20010126	200173	E

Priority Applications (no., kind, date): US 2000499151 A 20000207

### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 2001056463	A1	EN	31	3	
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX				

	MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW									
Regional Designated States, Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW									
AU 200131224	A		EN			Based on OPI patent				WO 2001056463

#### Alerting Abstract WO A1

NOVELTY - A tissue parameter catheter sensor (10) has its distal portion (14) inserted in the fornix of the patient's eye (22) in contact with the conjunctiva (26). Signals are received indicative of the parameters of the eye for display on a monitor (30).

DESCRIPTION - The tissue parameter catheter sensor includes multiple sensors for **monitoring** parameters of the tissue including, **pH**, and levels of oxygen and carbon dioxide.

USE - Non-invasive measurement of multiple systemic and tissue parameters from the conjunctiva.

ADVANTAGE - Causes minimal discomfort or damage to the eye of a patient.

DESCRIPTION OF DRAWINGS - The drawing shows a schematic diagram of the tissue parameter catheter sensor in the lower fornix of a patient's eye in contact with the conjunctiva.

10 Sensor

14 Distal portion of the sensor

22 Eye

**Title Terms /Index Terms/Additional Words:** NON; INVADE; MEASURE; MULTIPLE; SYSTEMIC; TISSUE; PARAMETER; CONJUNCTIVA; APPLY; ADULT; MINIMUM; DISCOMFORT; DAMAGE; EYE; CATHETER; SENSE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-E03B2; S05-D05

17/5/11 (Item 10 from file: 350) [Links](#)

Derwent WPIX

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0010730616 *Drawing available*

WPI Acc no: 2001-342382/200136

XRPX Acc No: N2001-247896

**Flow restrictor device to measure respiratory parameters, has breathing tube and flow restrictor to make flow laminar and pressure sensor tubes connected transducer to measure flow rate of breath**

Patent Assignee: HARVARD COLLEGE (HARD)

Inventor: GAZULA G K M; GODLESKI J J

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6224560	B1	20010501	US 1998151914	A	19980911	200136	B

Priority Applications (no., kind, date): US 1998151914 A 19980911

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 6224560	B1	EN	16	9	

#### Alerting Abstract US B1

**NOVELTY** - The device has breathing tube (10) first preselected diameter and preselected length. A flow restrictor (20) has an opening (23) having second preselected diameter positioned inside the breathing tube. the first and second diameter and length of breathing tube or selected such that flow within the breathing tube is laminar.

**DESCRIPTION** - The device has pressure sensor tube (25) positioned adjacent to the first end (21) of flow restrictor (20) to detect first pressure. A second pressure sensor (30) is positioned adjacent to second end (22) flow restrictor to detect second pressure. A pressure transducer (35) is connected to sensor tubes to **determine** difference between first and second **pressure**. The difference indicates the volume flow rate of breath in the breathing tube. A data acquisition system (40) is connected to transducer to analyze **pressure** data to **determine** volume flow rate of respiration in breathing tube. An **INDEPENDENT CLAIM** is also included for method of measuring respiratory parameters.

**USE** - Used in medical devices to measure **lung** function by monitoring respiratory patterns.

**ADVANTAGE** - Provides precision data for accurate measure of number of pulmonary function parameters. Works independently of the position of the subject. The device is much smaller and can be used on patient at bed side, including those who are anesthetized, unconscious, or otherwise non-responsive.

**DESCRIPTION OF DRAWINGS** - The figure shows the schematic diagram of flow restrictor and data acquisition system.

10 Breathing tube

20 Flow restrictor

21 First end

22 Second end

23 Opening

25 Pressure sensor tube

30 Pressure sensor

35 Pressure transducer

40 Data acquisition system

**Title Terms /Index Terms/Additional Words:** FLOW; RESTRICT; DEVICE; MEASURE; RESPIRATION; PARAMETER; BREATH; TUBE; LAMINA; PRESSURE; SENSE; CONNECT; TRANSDUCER; RATE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/08			Main		"Version 7"

US Classification, Issued: 600538000, 600529000, 600300000, 128128000, 128204230

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01C1

17/5/12 (Item 11 from file: 350) [Links](#)

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0010080503 *Drawing available*

WPI Acc no: 2000-386894/200033

XRAM Acc no: C2000-117293

XRPX Acc No: N2000-289671

**Blood vessel filtering system for treating blood-vessel embolism, has RF current generator for delivering RF current to first electrode of bipolar electrode unit, through conducting wire**

Patent Assignee: TU H (TUHH-I)

Inventor: TU H

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6068645	A	20000530	US 1999326815	A	19990607	200033	B

Priority Applications (no., kind, date): US 1999326815 A 19990607

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 6068645	A	EN	14	8	

Alerting Abstract US A

**NOVELTY** - Blood vessel filtering system has a RF current generator (30) for delivering RF current to first electrode of bipolar electrode unit through a conducting wire (29). A return conducting wire is also provided for connecting the second electrode of bipolar electrode unit to generator.

**DESCRIPTION** - A frustoconical filter device made up of shape memory material, comprises the bipolar electrode unit. The filter device is coupled to the distal end of an elongate element which pushes a handle outwardly so that filtering element of the filter device is fully deployed out for trapping the biological debris. The filter device has a filtering channel extending radially outwardly in such a way that the blood vessel is covered by periphery of filtering

channel. The retractable elongate element is positioned inside a delivery catheter (2), which has a handle (8) at the proximal end (4). A filter deployment unit (20) is mounted on the handle. The filtering element expands in distal direction away from the delivery catheter. The diameter of filtering element is larger than the diameter of blood vessel. The biological debris consists of either blood clots or emboli. The filtering element is in concave or convex shape during deployment. The filter device has a temperature sensor disposed near the bipolar electrode unit, for measuring the temperature of trapped biological debris. The RF current varies within 50-2000 KHz. The exterior surface of filtering element is electrically non-conductive.

An INDEPENDENT CLAIM is also included for filtering method of blood vessel which involves advancing distal end of delivery catheter to desired location within the blood vessel. The filtering element advanced relative to the delivery catheter is deployed out and expanded into predetermined shape within blood vessel for trapping the emboli. The entrapped emboli is treated by a debris treating unit selected from a group consisting of a radiofrequency bipolar electrode, an ultrasound transducer, plurality of laser fiber optics, a microwave antenna, a mechanical compressor and a cutter.

USE - For treating blood vessel embolism.

ADVANTAGE - The provision of RF current generator improves the filtering efficiency. The provision of temperature sensor in the delivery catheter, ensures reliable heat control by the power of delivered RF current.

DESCRIPTION OF DRAWINGS - The figure shows the blood vessel filtering system.

2 Delivery catheter

4 Proximal end

8 Handle

20 Filter deployment unit

29 Conducting wire

30 RF current generator

**Title Terms /Index Terms/Additional Words:** BLOOD; VESSEL; FILTER ; SYSTEM; TREAT; EMBOLISM; RF; CURRENT; GENERATOR; DELIVER; FIRST; ELECTRODE; BIPOLAR; UNIT; THROUGH; CONDUCTING; WIRE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61M-029/00			Main		"Version 7"
A61B-017/00			Secondary		"Version 7"

US Classification, Issued: 606200000, 606159000

File Segment: CPI; EngPI

DWPI Class: J01; P31; P34

Manual Codes (CPI/A-N): J01-F02

17/5/13 (Item 12 from file: 350) [Links](#)

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0009513563 *Drawing available*

WPI Acc no: 1999-456821/

Related WPI Acc No: 2001-257377

XRAM Acc no: C1999-133969

XRPX Acc No: N1999-341598

**Apparatus for determining cardiac output of the cardiovascular system of the body of a patient, gives highly enhanced measurement rapidity without adverse consequences to body hemostasis or stability**

Patent Assignee: CARDIOX CORP (CARD-N)

Inventor: EGGERS P E; HUNTLEY S P; KHALIL G E

Patent Family ( 8 patents, 30 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5928155	A	19990727	US 1997792967	A	19970124	199938	B
			US 199840167	A	19980317		
EP 943289	A1	19990922	EP 1999630023	A	19990312	199943	E
NO 199901259	A	19990920	NO 19991259	A	19990315	199949	E
AU 199920332	A	19990930	AU 199920332	A	19990310	199952	E
JP 11318834	A	19991124	JP 199972634	A	19990317	200006	E
CA 2256915	A1	19990917	CA 2256915	A	19981222	200007	E
AU 757810	B	20030306	AU 199920332	A	19990310	200324	E
CA 2256915	C	20030311	CA 2256915	A	19981222	200324	E

Priority Applications (no., kind, date): US 1997792967 A 19970124; US 199840167 A 19980317

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 5928155	A	EN	52	35	C-I-P of application	US 1997792967
					C-I-P of patent	US 5788647
EP 943289	A1	EN				
Regional Designated States,Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 11318834	A	JA	41			
CA 2256915	A1	EN				
AU 757810	B	EN			Previously issued patent	AU 9920332
CA 2256915	C	EN				

**Alerting Abstract US A**

NOVELTY - Apparatus for determining cardiac output of the cardiovascular system of the body of a patient.

DESCRIPTION - Apparatus comprises (a) catheter with externally disposed proximal end region and oppositely disposed measurement region positionable within the bloodstream of the body; (b) indicator channel within the catheter with a fluid input at the proximal end region connected with a controlled source of analyte-containing fluid, biocompatible with and metabolizable within the body, chosen from ammoniacal fluid, heparin, ethanol, carbon

dioxide-releasing fluid, glucose, anesthesia agent, but excluding oxygen, and extending to an infusion outlet at the measurement region from which the analyte-containing fluid may be expressed; and (c) analyte concentration sensor responsive to the analyte with a forward assembly configured for flowing blood contact mounted with the catheter at the measurement region at a location spaced downstream from the infusion outlet when positioned within the bloodstream and having an analyte sensor or concentration sensor output transmissible to the proximal end region corresponding with a concentration level of the analyte within the bloodstream that is correlatable with the cardiac output. INDEPENDENT CLAIMS are also included for (1) system for determining cardiac output of cardiovascular system of body; (2) method of determining cardiac output of cardiovascular system of body.

USE - Used to determine cardiac output of the cardiovascular system of the body of a patient (claimed).

ADVANTAGE - Capable of carrying out cardiac output measurements with highly enhanced measurement rapidity without adverse consequences to body hemostasis or stability. Enhanced cardiac output measurements are achieved by selection of analyte-containing fluid as dilution injectate that is non-thermal, biocompatible and metabolizable within the body of the patient. Accuracy is achieved without call for multiple measurement-averaging regimen.

Avoids labor-intensive cardiac output measurement processes, while making a variety of cardiovascular parameters available at a display and in conjunction with recorded media.

DESCRIPTION OF DRAWINGS - Schematic, partially sectional view of heart showing placement and illustrating use of cardiac output-measuring catheter.

60 pulmonary artery catheter

62 distal end or tip and measurement region

64 partially inflated balloon

66 outer tip

70 analyte -containing fluid injectate or infusion port

72 measurement region

**Title Terms /Index Terms/Additional Words:** APPARATUS; DETERMINE; CARDIAC; OUTPUT; CARDIOVASCULAR; SYSTEM; BODY; PATIENT; HIGH; ENHANCE; MEASURE; RAPID; ADVERSE; CONSEQUENT; HAEMOSTATIC; STABILISED

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/0215; A61B-005/0275; A61B-005/028; G01N			Main		"Version 7"
A61B-005/029; A61B-005/14; A61M-025/00			Secondary		"Version 7"

US Classification, Issued: 600526000, 600341000, 600479000

File Segment: CPI; EngPI; EPI

DWPI Class: B04; J04; S03; S05; P31; P34

Manual Codes (EPI/S-X): S03-E04E; S03-E14H; S05-D01B; S05-D01G

Manual Codes (CPI/A-N): B11-C08E2; B12-K04A2; J04-B



17/5/14 (Item 13 from file: 350) [Links](#)

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0009253146 *Drawing available*

WPI Acc no: 1999-180777/199915

XRPX Acc No: N1999-132763

**Cardiopulmonary bypass system**

Patent Assignee: BAXTER INT INC (BAXT); CLEVELAND CLINIC FOUND (CLEV-N) ; EDWARDS LIFESCIENCES LLC (EDWA-N)

Inventor: CAMBRON R; COSGROVE D M; COSGROVE M; FOSTER C; FOSTER R C; KNIGHT R; LITZIE K; VIJAY F

**Patent Family ( 10 patents, 80 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1999008734	A1	19990225	WO 1998US16893	A	19980814	199915	B
AU 199891049	A	19990308	AU 199891049	A	19980814	199929	E
US 6017493	A	20000125	US 1997938058	A	19970926	200012	E
EP 1003575	A1	20000531	EP 1998943208	A	19980814	200031	E
			WO 1998US16893	A	19980814		
JP 2001514939	W	20010918	WO 1998US16893	A	19980814	200169	E
			JP 2000509470	A	19980814		
US 6315751	B1	20011113	US 1997911870	A	19970815	200173	E
US 6537495	B1	20030325	US 1997938058	A	19970926	200325	E
			US 1999472093	A	19991223		
EP 1003575	B1	20041027	EP 1998943208	A	19980814	200471	E
			WO 1998US16893	A	19980814		
DE 69827266	E	20041202	DE 69827266	A	19980814	200479	E
			EP 1998943208	A	19980814		
			WO 1998US16893	A	19980814		
DE 69827266	T2	20051013	DE 69827266	A	19980814	200568	E
			EP 1998943208	A	19980814		
			WO 1998US16893	A	19980814		

Priority Applications (no., kind, date): US 1999472093 A 19991223; US 1997911870 A 19970815; US 1997938058 A 19970926

**Patent Details**

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 1999008734	A1	EN	97	55	
National Designated States, Original	AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU				

	LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW									
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW									
AU 199891049	A	EN			Based on OPI patent	WO 1999008734				
EP 1003575	A1	EN			PCT Application	WO 1998US16893				
					Based on OPI patent	WO 1999008734				
Regional Designated States,Original	AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE									
JP 2001514939	W	JA	94		PCT Application	WO 1998US16893				
					Based on OPI patent	WO 1999008734				
US 6537495	B1	EN			Division of application	US 1997938058				
					Division of patent	US 6017493				
EP 1003575	B1	EN			PCT Application	WO 1998US16893				
					Based on OPI patent	WO 1999008734				
Regional Designated States,Original	AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE									
DE 69827266	E	DE			Application	EP 1998943208				
					PCT Application	WO 1998US16893				
					Based on OPI patent	EP 1003575				
					Based on OPI patent	WO 1999008734				
DE 69827266	T2	DE			Application	EP 1998943208				
					PCT Application	WO 1998US16893				
					Based on OPI patent	EP 1003575				
					Based on OPI patent	WO 1999008734				

#### Alerting Abstract WO A1

**NOVELTY** - The system is a vacuum assisted venous drainage reservoir for use in cardiopulmonary bypass surgery with both hard and soft shell reservoirs. The system creates regulated negative pressure of approximately -70 to -25mmHg within a sealed hard shell reservoir (12), or within a sealed housing surrounding a soft shell reservoir. The reservoir has a blood inlet for supplying blood removed from the patient and a blood outlet leading to an oxygenator (28). A vacuum regulator subassembly (14) enables manual setting of the predetermined desired vacuum. A valve subassembly (16) manually enables and disables the negative pressure. A pressure relief valve reduces the severity of large changes in vacuum pressure.

**USE** - The system is used in minimally invasive cardiovascular surgical procedures to oxygenate the blood and maintain circulation during the entire time that the heart is arrested.

**ADVANTAGE** - Because the system enables the surgery to be minimally invasive it simplifies the cardiac surgery for surgeons and provides beneficial results for patients. The associated reduction in postoperative incisional pain allows the patients to be discharged earlier from the hospital.

**DESCRIPTION OF DRAWINGS** - The figure schematically illustrates a cardiopulmonary bypass circuit with the vacuum assisted venous drainage system of the present application.

12 Sealed reservoir

14 Vacuum regulator subassembly

16 Valve subassembly

28 Oygenator

**Title Terms /Index Terms/Additional Words:** SYSTEM

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61M-001/14; A61M-001/36; A61M-037/00			Main		"Version 7"
A61M-001/34			Secondary		"Version 7"

US Classification, Issued: 422044000, 604004000, 422045000, 604005010, 604004010, 604006130, 604006140, 422045000, 422045000, 604006140, 604006160 , 604004010, 128DIG

File Segment: EngPI; EPI;

DWPI Class: S02; S05; P34

Manual Codes (EPI/S-X): S02-F04D1; S05-C01

17/5/15 (Item 14 from file: 350) [Links](#)

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0009148048 *Drawing available*

WPI Acc no: 1999-069582/199906

XRPX Acc No: N1999-051023

**Ablation catheter system for treating cardiac arrhythmias - has metallic rings in catheter shaft, which are insulated from tip electrode and are provided with temperature sensors to measure tissue contact temperature, during delivery of RF energy**

Patent Assignee: IRVINE BIOMEDICAL INC (IRVI-N)

Inventor: CHEN P C

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5849028	A	19981215	US 1997858053	A	19970516	199906	B

Priority Applications (no., kind, date): US 1997858053 A 19970516

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 5849028	A	EN	8	3	

### Alerting Abstract US A

The system includes a catheter shaft (1) which is attached to a handle (4). The distal section (2) of catheter shaft has a tip electrode (8), a band electrode (10) and several tiny non- electrode metallic rings (9).

The tip electrode and band electrode are separated by metallic rings (9). The metallic rings include a temperature sensor (30) for measuring tissue contact temperature during delivery of RF energy to tissues for treatment. The metallic rings are separated from the tip electrode by insulating spacer materials (11,12).

USE - For treating tachycardias.

ADVANTAGE - Provides temperature sensor at tip section of catheter shaft to measure tissue contact temperature correctly, without contacting tip electrode, during RF energy delivery. Has close-loop temperature control mechanism.

**Title Terms /Index Terms/Additional Words:** ABLATE; CATHETER; SYSTEM; TREAT; CARDIAC; ARRHYTHMIC; METALLIC; RING; SHAFT; INSULATE; TIP; ELECTRODE; TEMPERATURE; SENSE; MEASURE; TISSUE; CONTACT; DELIVER; RF ; ENERGY

### Class Codes

#### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/36			Main		"Version 7"

US Classification, Issued: 607102000, 606041000, 606045000, 607101000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-A04; S05-D01E

17/5/16 (Item 15 from file: 350) [Links](#)

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0009141151 *Drawing available*

WPI Acc no: 1999-062387/

XRPX Acc No: N1999-046359

**In vivo zeroing of catheter pressure sensor - includes forming of isolated first and second chambers using pressure sensor element and registering of zero offset pressure according to pressure difference of chambers**

Patent Assignee: JOHNSON & JOHNSON PROFESSIONAL (JOHJ)

Inventor: BROWN E J; COOMBES A

#### Patent Family ( 5 patents, 26 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 888744	A2	19990107	EP 1998305250	A	19980701	199906	B
JP 11160180	A	19990618	JP 1998199472	A	19980701	199935	E

US 6120457	A	20000919	US 1997887481	A	19970702	200048	E
EP 888744	B1	20021002	EP 1998305250	A	19980701	200272	E
DE 69808383	E	20021107	DE 69808383	A	19980701	200281	E
			EP 1998305250	A	19980701		

Priority Applications (no., kind, date): EP 1998305250 A 19980701; US 1997887481 A 19970702

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
EP 888744	A2	EN	13	4		
Regional Designated States, Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 11160180	A	JA	8			
EP 888744	B1	EN				
Regional Designated States, Original	DE FR GB					
DE 69808383	E	DE			Application	EP 1998305250
					Based on OPI patent	EP 888744

#### Alerting Abstract EP A2

A catheter (10) contains a proximal end (14) and a distal end (16) including a tip region (20) for inserting into a patient for **in vivo** physiological pressure measurement i.e. monitoring intracranial pressure. A flexible cathode tube (24) forms a portion of passageways that extend between the proximal and distal ends and also branch tubes (28,30), while the catheter tube (24) carries smaller tubes and electric wires for connection to a pressure sensor device in the tip region.

A connector (31) is adapted for coupling to a pressure monitoring circuit (33), while a pressurised fluid source (35) can also be coupled to the connector (31) for providing fluid such as air to the tip region. The branch tubes are coupled to the catheter tube via the respective Y-connectors (32,34) and permit infusing extension of liquid or gas from the tip region using respective couplings (36,38) such as a syringe or fluid coupling. After forming of the surrounding pressure in 1 chamber, it is sealed and fluid under known pressure is passed into the other chamber, while a pressure sensor element gives a measurement of the zero offset pressure for calibration.

USE - **In vivo** physiological pressure measurement i.e. intracranial pressure.

ADVANTAGE - The **in vivo** calibration of catheter pressure sensor is more effective and reliable.

Title Terms /Index Terms/Additional Words: VIVO; ZERO; CATHETER; PRESSURE; SENSE; FORMING; ISOLATE; FIRST; SECOND; CHAMBER; ELEMENT; REGISTER; OFFSET; ACCORD; DIFFER

#### Class Codes

#### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/02; A61B-005/0215; G01L-009/04			Main		"Version 7"

A61B-005/00			Secondary		"Version 7"
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US Classification, Issued: 600486000, 600488000, 600561000

File Segment: EngPI; EPI;

DWPI Class: S02; S05; P31

Manual Codes (EPI/S-X): S02-F04F; S05-D01B1A; S05-D01X

17/5/17 (Item 16 from file: 350) [Links](#)

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0008953938 *Drawing available*

WPI Acc no: 1998-506438/199843

XRPX Acc No: N1998-394794

**System for ablating tissue within body using tissue via blood vessels of body - couples sensor to catheter and to energy source and degree to which electrode contacts heart tissue is determined**

Patent Assignee: MEDTRONIC INC (MEDT)

Inventor: WITTKAMPF F H M

Patent Family ( 4 patents, 20 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1998040023	A1	19980917	WO 1998US4172	A	19980304	199843	B
EP 967924	A1	20000105	EP 1998907712	A	19980304	200006	E
			WO 1998US4172	A	19980304		
US 6063078	A	20000516	US 1997815819	A	19970312	200031	E
JP 2001514557	W	20010911	JP 1998539618	A	19980304	200167	E
			WO 1998US4172	A	19980304		

Priority Applications (no., kind, date): US 1997815819 A 19970312

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1998040023	A1	EN	38	13		
National Designated States,Original	JP					
Regional Designated States,Original	AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
EP 967924	A1	EN			PCT Application	WO 1998US4172
					Based on OPI patent	WO 1998040023

Regional Designated States, Original	CH DE FR LI NL SE					
JP 2001514557	W	JA	35	PCT Application	WO 1998US4172	
				Based on OPI patent	WO 1998040023	

#### Alerting Abstract WO A1

The system ablates **tissue** within a body by accessing the body **tissue** through the blood vessels of the body and comprises an energy source providing a level of energy which is non damaging to the cellular structures of the body **tissue**. A catheter has an electrode and is coupled to the energy source.

The temperature of the electrode is sensed while also sensing the amount of energy which is non damaging to the cellular structures of the body **tissues** is delivered to the electrode. The sensor is coupled to the catheter and coupled to the energy source and the degree to which the electrode contacts the **heart tissue** is determined, for example, no contact, moderate, good or excellent contact.

USE - Relates to field of devices for cardiac surgery and to devices for RF ablation of cardiac **tissue**.

ADVANTAGE - Permits electrode **tissue** contact to be reliably indicated.

**Title Terms /Index Terms/Additional Words:** SYSTEM; ABLATE; **TISSUE**; BODY; BLOOD; VESSEL; COUPLE; SENSE; CATHETER; ENERGY; SOURCE ; DEGREE; ELECTRODE; CONTACT; **HEART**; DETERMINE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/39; A61B-018/12; A61B-018/18			Main		"Version 7"
A61B-018/00			Secondary		"Version 7"

US Classification, Issued: 606041000, 606049000, 607102000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B03; S05-B05

17/5/18 (Item 17 from file: 350) [Links](#)

Derwent WPIX

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0008768062 *Drawing available*

WPI Acc no: 1998-311226/199827

XRPX Acc No: N1998-244019

**Tracheal pressure measuring for patient on ventilator - involves detecting tracheal pressure in bore of**

**endotracheal tube, by using computing apparatus, based on detection results of pair of sensors**

Patent Assignee: KORR MEDICAL TECHNOLOGIES INC (KORR-N)

Inventor: ORR J A

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5752921	A	19980519	US 1996584892	A	19960111	199827	B

Priority Applications (no., kind, date): US 1996584892 A 19960111

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 5752921	A	EN	16	5	

**Alerting Abstract US A**

The method involves using an endotracheal tube (14) with an inflatable surgical cuff (12). The surgical cuff is engaged with a portion of the trachea of the patient. A first pressure sensor (16) detects the pressure of fluid flowing through the endotracheal tube, during respiration of the patient.

A second pressure sensor which is connected to the surgical cuff detects the pressure generated due to respiration of patient. A computer (36) connected to the first and second sensors computes the tracheal pressure in the bore of the endotracheal tube, based on the detection results.

**ADVANTAGE** - Automates tracheal pressure determination.

**Title Terms /Index Terms/Additional Words:** TRACHEA; PRESSURE; MEASURE; PATIENT; VENTILATION; DETECT; BORE; ENDOTRACHEAL; TUBE; COMPUTATION; APPARATUS; BASED; RESULT; PAIR; SENSE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/085			Main		"Version 7"
A61M-016/00			Secondary		"Version 7"

US Classification, Issued: 600533000, 128207150

File Segment: EngPI; EPI;

DWPI Class: S05; T01; P31; P34

Manual Codes (EPI/S-X): S05-D01C1; T01-J06A; T01-J08A1

17/5/19 (Item 18 from file: 350) [Links](#)



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0008412131 *Drawing available*

WPI Acc no: 1997-529562/199749

XRPX Acc No: N1997-441117

**Trans-cervical sterilisation and trans-catheter embolisation appts. for creating thermal lesions in fallopian tubes or thrombosing vessels - using controlled bipolar RF catheter to create thermal lesions which has bipolar electrodes at patient end, with mucosa sensor responsive to temp. to determine condition of trans-mural lesion formation**

Patent Assignee: SHERWOOD SERVICES AG (SHES); VALLEYLAB INC (VALL-N)

Inventor: LAMBRECHT G H; RYAN T; RYAN T P

Patent Family ( 10 patents, 7 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
GB 2313062	A	19971119	GB 19978729	A	19970429	199749	B
DE 19719934	A1	19971120	DE 19719934	A	19970513	199801	E
FR 2748648	A1	19971121	FR 19975848	A	19970513	199803	E
AU 199720843	A	19971120	AU 199720843	A	19970513	199804	E
JP 10043198	A	19980217	JP 1997123823	A	19970514	199817	E
CA 2204566	A	19971114	CA 2204566	A	19970506	199822	E
US 6066139	A	20000523	US 1996649146	A	19960514	200032	E
GB 2313062	B	20000830	GB 19978729	A	19970429	200042	E
AU 723252	B	20000824	AU 199720843	A	19970513	200045	E
CA 2204566	C	20010710	CA 2204566	A	19970506	200142	E

Priority Applications (no., kind, date): US 1996649146 A 19960514

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
GB 2313062	A	EN	31	14		
DE 19719934	A1	DE	19	14		
JP 10043198	A	JA	14			
CA 2204566	A	EN				
AU 723252	B	EN			Previously issued patent	AU 9720843
CA 2204566	C	EN				

**Alerting Abstract GB A**

The sterilization-embolisation appts. uses a controlled bipolar radio frequency catheter for creating thermal lesions, which has an elongate catheter (21) with a patient end (24). A connector on the end of the catheter opposite the patient end has terminations (26) for RF energy input and monitoring leads and is shaped for the surgeon to manipulate during placement and withdrawal.

Two or more bipolar electrodes (29-31) near the patient end are placed so each electrode is spaced from another

with each circumscribing the catheter. A mucosa or thrombus sensor (32) responsive respectively to temperature and applied RF energy passing between the bipolar electrodes determines the condition of the trans-mural formation of a lesion or a thrombus between each of the electrodes.

ADVANTAGE - Simplifies procedure and obviates surgery via controlled procedure which is minimally invasive and non-traumatic.

**Title Terms /Index Terms/Additional Words:** TRANS; CERVIX; STERILE; CATHETER; EMBOLISM; APPARATUS; THERMAL; LESION; FALLOPIAN; TUBE; VESSEL; CONTROL; BIPOLAR; RF; ELECTRODE; PATIENT; END; MUCOUS; SENSE; RESPOND; TEMPERATURE; DETERMINE; CONDITION; MURAL; FORMATION

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/36; A61B-017/39; A61B-017/42; A61B-018/12			Main		"Version 7"
A61F-007/00; A61M-025/00; A61N-007/00; G01N-027/10; G01N-027/14			Secondary		"Version 7"

US Classification, Issued: 606050000, 606040000, 606041000, 606135000

File Segment: EngPI; EPI;

DWPI Class: S05; T01; U21; V06; P31; P34

Manual Codes (EPI/S-X): S05-B03; T01-J06A; U21-A02; U21-A03; U21-B05A; V06-L01A

17/5/20 (Item 19 from file: 350) [Links](#)

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0007923941 *Drawing available*

WPI Acc no: 1997-011800/199701

XRPX Acc No: N1997-010313

**Heat treatment device for body tissue - has temp. sensor connected to carrier which is advanced through and out of catheter into body tissue.**

Patent Assignee: LUND INSTR AB (LUND-N); LUND INSTR AG (LUND-N); PROSTALUND OPERATIONS AB (PROS-N)

Inventor: BOLMSJO M; BOLMSJOE M

##### Patent Family ( 14 patents, 69 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1996036288	A1	19961121	WO 1996SE649	A	19960517	199701	B

SE 199501875	A	19961119	SE 19951875	A	19950518	199706	E
AU 199659159	A	19961129	AU 199659159	A	19960517	199712	E
SE 505332	C2	19970811	SE 19951875	A	19950518	199738	E
EP 835077	A1	19980415	EP 1996916407	A	19960517	199819	E
			WO 1996SE649	A	19960517		
AU 697403	B	19981008	AU 199659159	A	19960517	199901	E
JP 11505155	W	19990518	JP 1996534763	A	19960517	199930	E
			WO 1996SE649	A	19960517		
US 5964791	A	19991012	WO 1996SE649	A	19960517	199949	E
			US 1997952260	A	19971114		
RU 2180200	C2	20020310	WO 1996SE649	A	19960517	200231	E
			RU 1997120708	A	19960517		
CN 1184411	A	19980610	CN 1996193846	A	19960517	200254	E
US RE38299	E	20031111	WO 1996SE649	A	19960517	200382	E
			US 1997952260	A	19971114		
			US 2001945574	A	20010904		
JP 3558646	B2	20040825	JP 1996534763	A	19960517	200456	E
			WO 1996SE649	A	19960517		
CN 1119127	C	20030827	CN 1996193846	A	19960517	200549	E
EP 835077	B1	20061102	EP 1996916407	A	19960517	200672	E
			WO 1996SE649	A	19960517		

Priority Applications (no., kind, date): SE 19951875 A 19950518

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1996036288	A1	EN	16	7		
National Designated States, Original	AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN					
Regional Designated States, Original	AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG					
SE 199501875	A	SV				
AU 199659159	A	EN			Based on OPI patent	WO 1996036288
SE 505332	C2	SV				
EP 835077	A1	EN			PCT Application	WO 1996SE649
					Based on OPI patent	WO 1996036288
Regional Designated States, Original	BE CH DE ES FR GB IT LI NL SE					
AU 697403	B	EN			Previously issued patent	AU 9659159
					Based on OPI patent	WO 1996036288

JP 11505155	W	JA	19	PCT Application	WO 1996SE649
				Based on OPI patent	WO 1996036288
US 5964791	A	EN		PCT Application	WO 1996SE649
				Based on OPI patent	WO 1996036288
RU 2180200	C2	RU		PCT Application	WO 1996SE649
				Based on OPI patent	WO 1996036288
US RE38299	E	EN		PCT Application	WO 1996SE649
				Original reissued application	US 1997952260
				Reissue of patent	US 5964791
				Based on OPI patent	WO 1996036288
JP 3558646	B2	JA	9	PCT Application	WO 1996SE649
				Previously issued patent	JP 11505155
				Based on OPI patent	WO 1996036288
EP 835077	B1	EN		PCT Application	WO 1996SE649
				Based on OPI patent	WO 1996036288
Regional Designated States,Original	BE CH DE ES FR GB IT LI NL SE				

#### Alerting Abstract WO A1

The heat treatment device comprises a heating device (10) for local heating of the body tissue, and a temp. sensor (11) for sensing the temp. of the tissue, the heating device being enclosed in a catheter (12). The temp. sensor is connected to a first carrier (13) which is made to be advanced through and out of the catheter. The first carrier is equipped with a pointed tip for insertion into body tissue that is to be heat treated.

Pref. a second temp. sensor (14) is connected to a second carrier (15), which is made to be advanced through and out of the catheter, and the second carrier is equipped with a pointed tip for insertion into body tissue which is to be excluded from the heat treatment. The heating device may comprise at least one microwave antenna for delivery of energy to the body tissue. The first carrier may be contained in a tubing located in the catheter.

USE/ADVANTAGE - In treatment of cancer. Registration of relevant temp. data from body tissue is readily made possible. Treatment may take place in outpatient setting without requirement of surgical staff and equipment of operation rooms.

**Title Terms /Index Terms/Additional Words:** HEAT; TREAT; DEVICE; BODY; TISSUE; TEMPERATURE; SENSE; CONNECT; CARRY; ADVANCE; THROUGH; CATHETER

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61N-005/02			Main		"Version 7"
A61B-0017/00	A	N		R	20060101
A61B-0017/22	A	N		R	20060101
A61B-0018/00	A	N		R	20060101
A61B-0018/12	A	I	L	R	20060101
A61B-0018/14	A	I		R	20060101

A61B-0018/18	A	I		R	20060101
A61F-0002/84	A	I	L	R	20060101
A61N-0005/02	A	I	F	R	20060101
A61N-0005/04	A	I		R	20060101
A61B-0018/08	A	I	F	B	20060101
A61B-0018/18	A	I	L	B	20060101
A61N-0005/04	A	I	L	B	20060101
A61B-0017/00	C	N		R	20060101
A61B-0017/22	C	N		R	20060101
A61B-0018/00	C	N		R	20060101
A61B-0018/12	C	I	L	R	20060101
A61B-0018/14	C	I		R	20060101
A61B-0018/18	C	I		R	20060101
A61F-0002/82	C	I	L	R	20060101
A61N-0005/02	C	I		R	20060101
A61B-0018/04	C	I	F	B	20060101
A61N-0005/02	C	I	L	B	20060101

US Classification, Issued: 606049000, 607102000, 607100000

File Segment: EngPI; EPI;

DWPI Class: S05; P31; P32; P34

Manual Codes (EPI/S-X): S05-A03

17/5/21 (Item 20 from file: 350) [Links](#)

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0007621079 *Drawing available*

WPI Acc no: 1996-239214/

XRPX Acc No: N1996-200258

**Self-guiding, multifunctional visceral catheter - uses two optical fibres connected to fibre optic and fibre-optic biochemical sensors and coupled to microprocessor based analyser to guide catheter**

Patent Assignee: LANGE M P (LANG-I)

Inventor: DAHN M S; LANGE M P

Patent Family ( 5 patents, 19 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1996013205	A1	19960509	WO 1995US13390	A	19951027	199624	B
US 5520178	A	19960528	US 1994332715	A	19941101	199627	E
US 5531714	A	19960702	US 1994332715	A	19941101	199632	E

			US 1995411101	A	19950327		
EP 798981	A1	19971008	EP 1995939535	A	19951027	199745	E
			WO 1995US13390	A	19951027		
CA 2204146	C	19990615	CA 2204146	A	19951027	199942	E
			WO 1995US13390	A	19951027		

Priority Applications (no., kind, date): US 1994332715 A 19941101; US 1995411101 A 19950327

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1996013205	A1	EN	40	14		
National Designated States,Original	CA					
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
US 5520178	A	EN	9	6		
US 5531714	A	EN	11	8	C-I-P of application	US 1994332715
EP 798981	A1	EN			PCT Application	WO 1995US13390
					Based on OPI patent	WO 1996013205
Regional Designated States,Original	CH DE FR GB LI					
CA 2204146	C	EN			PCT Application	WO 1995US13390
					Based on OPI patent	WO 1996013205

#### Alerting Abstract WO A1

The catheter (1) has a distal end bent at an angle to facilitate engagement with a selected vein. The catheter is hollow with side vents (5) for the catheter lumen with optical fibers (6,7) extending within the catheter and retained in position by being embedded within the PVC or other material from which the catheter is fabricated.

The optical fibres form part of a fiber-optic sensor system. One of the fibers is connected to a fiber-optic sensor (12) on the main axial portion of the catheter whilst the other is connected to a fiber-optic biochemical sensor (14) on the angled distal end of the catheter. The proximal ends of the fibers are coupled to an analyser which comprises a light source, detection means and a microprocessor.

ADVANTAGE - Can be readily positioned within the hepatic or renal venous system.

**Title Terms /Index Terms/Additional Words:** MULTIFUNCTION; VISCERA; CATHETER; TWO; OPTICAL; FIBRE; CONNECT; BIOCHEMICAL; SENSE; COUPLE ; MICROPROCESSOR; BASED; ANALYSE; GUIDE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00;					

A61M-005/00					
			Main Secondary		"Version 7" "Version 7"
A61M-025/00					

US Classification, Issued: 128637000, 128642000, 128692000, 604264000, 604264000, 128634000, 128657000, 128692000, 128772000, 604270000

XRFX Acc No: N1995-153359

**Intra-aortic catheter for renal perfusion and conservation - after irreversible heart failure has inflatable balloons on either side of perfusion section, and series of lumens linked to monitors**

Patent Assignee: ANAYA FERNANDES DE LOMANA E F (DLOM-I); ANAYA FERNANDEZ DE LOMANA E F (DLOM-I)

Inventor: ANAYA F D L E F; ANAYA FERNANDEZ DE LOMANA E F

Patent Family ( 8 patents, 18 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 654283	A1	19950524	EP 1994500190	A	19941122	199526	B
CA 2136407	A	19950523	CA 2136407	A	19941122	199534	E
JP 7255836	A	19951009	JP 1994312769	A	19941122	199549	E
ES 2077519	A1	19951116	ES 19932434	A	19931122	199551	E
US 5505701	A	19960409	US 1994343106	A	19941122	199620	E
ES 2077519	B1	19960701	ES 19932434	A	19931122	199633	E
EP 654283	B1	19990414	EP 1994500190	A	19941122	199919	E
DE 69417847	E	19990520	DE 69417847	A	19941122	199926	E
			EP 1994500190	A	19941122		

Priority Applications (no., kind, date): ES 19932434 A 19931122

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
EP 654283	A1	FR	12	7		
Regional Designated States,Original	AT BE CH DE DK FR GB GR IE IT LI NL PT SE					
CA 2136407	A	EN				
JP 7255836	A	JA	7			
US 5505701	A	EN	11	7		
EP 654283	B1	FR				
Regional Designated States,Original	AT BE CH DE DK FR GB GR IE IT LI NL PT SE					
DE 69417847	E	DE			Application	EP 1994500190
					Based on OPI patent	EP 654283

**Alerting Abstract EP A1**

An intra-aortic catheter for renal perfusion and conservation comprises a tube with a series of lumens, one of which (b) is in communication with a permeable region (B) with apertures in an intermediate zone of the catheter between the kidneys, a sensor lumen (s) which ends in the same region, an optional lumen for a guide wire, and distal (d) and proximal (p) lumens in communication with corresponding inflatable balloons (D,P) which can obstruct the circulation in the aorta. The appropriate terminals or lumens are connected to monitoring equipment comprising an electrocardiograph; a haemodynamic and biochemical unit for measuring arterial pressure and temp. and determining the gas composition of small blood samples; an automatic inflation system for the balloons connected to heart sensors; and a perfusion pumping unit.



ADVANTAGE - Preserves kidneys in requisite state for transplantation in event of irreversible heart failure.

**Title Terms /Index Terms/Additional Words:** INTRA; AORTA; CATHETER; RENAL; PERFUSION; CONSERVE; AFTER; IRREVERSIBLE; **HEART**; FAIL; INFLATE; BALLOON; SIDE; SECTION; SERIES; LUMEN; LINK; MONITOR

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61M-001/12; A61M-025/10			Main		"Version 7"
A61B-0005/00	A	I		R	20060101
A61B-0005/042	A	I		R	20060101
A61M-0025/00	A	I		R	20060101
A61M-0025/10	A	I		R	20060101
A61M-0029/02	A	N		R	20060101
A61B-0005/00	C	I		R	20060101
A61B-0005/0408	C	I		R	20060101
A61M-0025/00	C	I		R	20060101
A61M-0025/10	C	I		R	20060101
A61M-0029/02	C	N		R	20060101

US Classification, Issued: 604099000, 604101000, 604102000, 604030000, 604066000

File Segment: CPI; EngPI

DWPI Class: D22; P34

Manual Codes (CPI/A-N): D09-C01B

17/5/23 (Item 22 from file: 350) [Links](#)

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0006439753 *Drawing available*

WPI Acc no: 1993-242839/199330

XRPX Acc No: N1993-186873

**Fibre optic blood pressure and oxygenation sensor** - has fibre optics to connect sensing head positioned on distal end of catheter to light sources, and photodetector with head containing deforming diaphragm and oxygen measuring cell.

Patent Assignee: FIBEROPTIC SENSOR TECHNOLOGIES INC (FIBE-N)

Inventor: ANDERSON C D; VOKOVICH D L; WLODARCZYK M T

Patent Family ( 3 patents, 18 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
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WO 1993013707	A1	19930722	WO 1993US715	A	19930121	199330	B
EP 576670	A1	19940105	EP 1993904659	A	19930121	199402	E
			WO 1993US715	A	19930121		
US 5280786	A	19940125	US 1992823143	A	19920121	199405	E

Priority Applications (no., kind, date): US 1992823143 A 19920121

Patent Details							
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes		
WO 1993013707	A1	EN	28	9			
National Designated States,Original	JP						
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE						
EP 576670	A1	EN	2	1	PCT Application	WO 1993US715	
					Based on OPI patent	WO 1993013707	
Regional Designated States,Original	DE FR GB IT						
US 5280786	A	EN	11	9			

#### Alerting Abstract WO A1

The sensor includes a catheter (11) with a sensor head mounted on its distal end. Fiber optics connect the sensor head to optical couplers for pressure and oxygen measurements. A lumen provides a method of applying a known fluid pressure to the tip for calibration of the pressure sensor.

The sensor head has three light sources (32,34,36) and three photodetectors (38,40,42) to transmit and receive light to and from the fiber optic (44) and a deformable diaphragm which modulates the intensity of the returned light.

**Blood oxygen is measured** by light passing through a fiber optic (52) and through blood in a recess in the tip. The light is reflected from a mirror down a further fiber optic (54).

**ADVANTAGE** - Provides efficient and cost effective **blood pressure** and **oxygen** content measuring appts. which produces stable signals from a small and less complex sensing head.

**Title Terms /Index Terms/Additional Words:** FIBRE; OPTICAL; BLOOD ; PRESSURE; OXYGENATE; SENSE; CONNECT; HEAD; POSITION; DISTAL; END; CATHETER; LIGHT; SOURCE; PHOTODETECTOR; CONTAIN; DEFORM; DIAPHRAGM; OXYGEN; MEASURE; CELL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-0005/00	A	I		R	20060101
A61B-0005/0215	A	I		R	20060101
A61B-0005/00	C	I		R	20060101
A61B-0005/0215	C	I		R	20060101

US Classification, Issued: 128634000, 128670000, 128673000, 128675000, 356041000

File Segment: EngPI; EPI;

DWPI Class: S02; S05; V07; P31

Manual Codes (EPI/S-X): S02-F04A2; S02-K03B1; S05-D01B1; S05-D01G; V07-N

17/5/24 (Item 23 from file: 350) [Links](#)

Derwent WPIX

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0006196917 *Drawing available*

WPI Acc no: 1992-152158/

XRPX Acc No: N1992-113507

**Catheter sensor assembly for in-vivo physiological pressure measurement - can be reset to zero by applying pressure on both sides of sensor and equalising**

Patent Assignee: BECTON DICKINSON CO (BECT)

Inventor: ERSKINE T J; GUSTAFSON G E; KIMBLE S C; RICHARDSON K L; RING W H

Patent Family ( 9 patents, 16 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 475686	A	19920318	EP 1991308149	A	19910905	199219	B
CA 2046404	A	19920308	CA 2046404	A	19910705	199221	E
US 5133358	A	19920728	US 1990578712	A	19900907	199233	E
US 5203340	A	19930420	US 1990578712	A	19900907	199317	E
			US 1992851712	A	19920316		
CA 2046404	C	19950822	CA 2046404	A	19910705	199540	E
EP 475686	B1	19960131	EP 1991308149	A	19910905	199609	E
DE 69116775	E	19960314	DE 69116775	A	19910905	199616	E
			EP 1991308149	A	19910905		
ES 2085433	T3	19960601	EP 1991308149	A	19910905	199629	E
IE 74687	B	19970730	IE 19912168	A	19910621	199744	E

Priority Applications (no., kind, date): US 1992851712 A 19920316; US 1990578712 A 19900907

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
EP 475686	A	EN	11	4		
Regional Designated States, Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
CA 2046404	A	EN				

US 5133358	A	EN	10	4		
US 5203340	A	EN	9	4	Continuation of application	US 1990578712
					Continuation of patent	US 5133358
CA 2046404	C	EN				
EP 475686	B1	EN	12	4		
Regional Designated States, Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
DE 69116775	E	DE			Application	EP 1991308149
					Based on OPI patent	EP 475686
ES 2085433	T3	ES			Application	EP 1991308149
					Based on OPI patent	EP 475686
IE 74687	B	EN				

#### Alerting Abstract EP A

The sensor is associated with a catheter or probe for placement within a human or animal to allow direct monitoring within the body. A signal is obtained from an **in vivo** side of a sensor at the distal end of a lumen of an **in-vivo** tube, the sensor having a first side exposed to a physiological pressure. A pressure equal to the physiological pressure is transmitted through a catheter to and through a circuitous path.

The pressure is applied in the circuitous path to the lumen to equalise the pressure on a second side of the sensor opposite the first side. The signal for balanced pressure applied to the sides of the **in-vivo** sensor is delivered for use in correcting for zero offset, the balance pressure occurring when the circuitous path is at an elevation equal to the elevation of the sensor.

**ADVANTAGE - In- vivo** re-zeroing assembly provides freedom from infection due to handling and convenience of use in that rotating multi-position valve from position one to position two connects the physiological pressure to both sides of the sensor and disconnects the vent to the second side of the sensor (21).

**Title Terms /Index Terms/Additional Words:** CATHETER; SENSE; ASSEMBLE; **IN-VIVO**; PHYSIOLOGICAL; PRESSURE; MEASURE; CAN; RESET; ZERO; APPLY; SIDE; EQUAL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/02; A61B-005/021; A61B-005/0215			Main		"Version 7"
A61M-025/00; G01L-027/00			Secondary		"Version 7"

US Classification, Issued: 128675000, 073004R00, 128675000, 073004R00

File Segment: EngPI; EPI;

DWPI Class: S02; S05; P31; P34

Manual Codes (EPI/S-X): S02-F04F; S05-D01

17/5/25 (Item 24 from file: 350) [Links](#)

Derwent WPIX

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0005550661 *Drawing available*

WPI Acc no: 1991-155677/199121

XRAM Acc no: C1991-067255

XRPX Acc No: N1991-119529

**Fluorometric sensor for oxygen concn. in a body fluid - using an elongate optic catheter with a distally positioned fluorometric sensor**

Patent Assignee: SHULZE J E (SHUL-I)

Inventor: SHULZE J E

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5012809	A	19910507	US 1986917399	A	19861010	199121	B

Priority Applications (no., kind, date): US 1986917399 A 19861010

**Alerting Abstract US A**

Fluorometric sensor has an arrangement (114-121) for emitting excitation light containing a wavelength in the upper visible-long ultraviolet light spectrum into the proximal end of an elongate fibre optic equipped catheter (100) having a distally positioned fluorometric sensor (110). The sensor comprises a silicone copolymer matrix and a fluophor, formed by dissolving into a silicone copolymer an amount of 0.1 to 3.0 wt.% of a fluophor so that the fluophor emits a fluorescent signal, in response to the excitation light, which has an intensity that is quenched by oxygen permeating from a body fluid into the matrix. The intensity of fluorescence is measured (210) at the proximal end of the catheter to indicate the oxygen concentration in the body fluid.

Pref. fluorometric sensor is of silicone polycarbonate copolymer, or silicone-polystyrene copolymer, with the fluophor of parylene dibutyrate, tris (4,7-diphenyl 1,10 phenanthroline) ruthenium II, tris(di-sulphonated 4,7 diphenyl 1,10 phenanthroline) ruthenium II or tris (bipyridine) ruthenium II.

USE/ADVANTAGE - Used in the **in-situ** measurement of blood gas concentrations. Provides a sensor with a higher output and sensitivity, and which is simple and easy to manufacture and use.

**Title Terms /Index Terms/Additional Words:** FLUORIMETRIC; SENSE; OXYGEN; CONCENTRATE; BODY; FLUID; ELONGATE; OPTICAL; CATHETER; DISTAL; POSITION

#### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Secondary		"Version 7"

US Classification, Issued: 128634000, 128665000, 422052000, 436172000

File Segment: CPI; EngPI; EPI

DWPI Class: A89; B04; J04; S03; S05; V07; P31

Manual Codes (EPI/S-X): S03-A01B; S03-E04D; S05-D01X; V07-X

Manual Codes (CPI/A-N): A06-A00E3; A12-V03C2; B04-B04D5; B04-C03B; B04-C03C; B05-A03B; B05-C08; B07-D04C; B08-B; B09-D01; B11-C07B3; B12-K04A; J04-B01A; J04-C04

17/5/26 (Item 25 from file: 350) [Links](#)

Derwent WPIX

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0004875757 *Drawing available*

WPI Acc no: 1989-256021/

**Circumferential probe for evaluating human urinary sphincter function - has several deformable wall sensors along length of urodynamic pressure measurement probe to sense fluid pressure inside bladder**

Patent Assignee: NAT AERO & SPACE ADMIN (USAS); VIRGINIA COMMUNW UNIV (UYVI-N)

Inventor: FANTI A J; FANTL A J; HOLMES H K; MOORE T C

Patent Family ( 2 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US N7248020	N	19890530	US 1988248020	A	19880923	198935	B
US 4873990	A	19891017	US 1988248020	A	19880923	198951	E

Priority Applications (no., kind, date): US 1988248020 A 19880923

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US N7248020	N	EN	14	6	
US 4873990	A	EN	6		

#### Alerting Abstract US N

The probe for measuring circumferential pressures has several deformable wall sensors (15) along its length. The sensors typically comprise support tube sections with flexible side wall areas (16). These are arranged along the length of the probe in two areas, one just proximal to the tip (13) for the sensing of fluid pressure inside the bladder. Five are in a sensing section (14) which is positioned within the urethra at the point at which the urinary sphincter constricts to control the flow of urine. The remainder of the length of the probe comprises multiple rigid support tube sections (10) interspersed with flexible support tube sections in the form of bellows to provide flexibility. USE/ADVANTAGE - For urethra and coronary arteries. Accurate, compact, lightweight, durable, can make multiple measurements simultaneously, does not cause undue distension of surrounding tissues, is protected from corrosive and electrically -conductive urine, easily sterilised, electronically stable.

**Title Terms /Index Terms/Additional Words:** CIRCUMFERENCE; PROBE; EVALUATE; HUMAN; URINE; SPHINCTER; FUNCTION; DEFORM; WALL; SENSE; LENGTH; PRESSURE; MEASURE; FLUID; BLADDER

**Class Codes**

## International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"
G01L-000/01			Secondary		"Version 7"

US Classification, Issued: 128748000, 128675000, 128778000

File Segment: EngPI; EPI;

DWPI Class: S02; S05; P31

Manual Codes (EPI/S-X): S02-F04B; S05-D01X

17/5/27 (Item 26 from file: 350) [Links](#)

Derwent WPIX

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0004564718 *Drawing available*

WPI Acc no: 1988-316510/198845

**Oxygenation examination appts. using infrared spectrophotometry - controls multi-wavelength source intensities and transmission characteristic of detection-side neutral density filter**

Patent Assignee: HAMAMATSU PHOTONICS KK (HAMM)

Inventor: HAKAMATA N; OZAKI T; SUZUKI S; YAGI S

## Patent Family ( 4 patents, 2 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 290274	A	19881109	EP 1988304132	A	19880506	198845	B
US 4907876	A	19900313	US 1988188957	A	19880502	199016	E
EP 290274	B1	19930714	EP 1988304132	A	19880506	199328	E
DE 3882273	G	19930819	DE 3882273	A	19880506	199334	E
			EP 1988304132	A	19880506		

Priority Applications (no., kind, date): JP 1987110472 A 19870508; JP 1987110465 A 19870508

## Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
EP 290274	A	EN	15	7		
Regional Designated States, Original	DE GB					
EP 290274	B1	EN	13	4		
Regional Designated States, Original	DE GB					

DE 3882273	G	DE		Application	EP 1988304132
				Based on OPI patent	EP 290274

#### Alerting Abstract EP A

The outputs from infrared sources (LD1-LD4) are controlled (2) automatically in accordance with instructions from a computer system (3) so that the quantities of radiation to be detected (4) are independent of the four wavelengths. Optimum transmission factors and output powers of the sources (LD1-LD4) are stored in the computer memory (8). The neutral density filter (5) has a variable transmission factor set by means of a driver (6) to its optimum value throughout the measurement of the radiation transmitted between fixtures (51,52) on opposite sides of the subject (40), while the outputs from the sources (LD1-LD4) are adjusted as necessary.

USE/ADVANTAGE - For measuring oxygen concn. esp. in haemoglobin and cytochrome. Accurate results are obtd. with rapid adjustment to differences in basic optical transmission characteristics of subject.

**Title Terms /Index Terms/Additional Words:** OXYGENATE; EXAMINATION; APPARATUS; INFRARED; SPECTROSCOPE; CONTROL; MULTI; WAVELENGTH; SOURCE; INTENSITY; TRANSMISSION; CHARACTERISTIC; DETECT; SIDE; NEUTRAL; DENSITY; FILTER

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"
G01N-021/31; G01N-033/49			Secondary		"Version 7"

US Classification, Issued: 356041000, 128633000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-E04; S03-E14H1; S05-D01

17/5/28 (Item 27 from file: 350) [Links](#)

Derwent WPIX

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0004523091

WPI Acc no: 1988-271010/198838

**Cardiac output monitor based upon dilution method - has two thermistors measuring blood temp. diluted with liquid indicator and detecting thermal equilibrium temp. of catheter**

Patent Assignee: SEKII S (SEKI-I); TERUMO CORP (TERU)

Inventor: IKEDA M; KOUJI T; MAKOTO I; SEKII S; SHIGEKAZU S; TSUCHIDA K



**Patent Family ( 14 patents, 8 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1988006426	A	19880907	WO 1988JP239	A	19880304	198838	B
EP 374248	A	19900627	EP 1988902239	A	19880304	199026	E
US 5046505	A	19910910	US 1989415298	A	19890905	199139	E
EP 596539	A2	19940511	EP 1988902239	A	19880304	199419	E
			EP 1993119022	A	19880304		
EP 599314	A2	19940601	EP 1988902239	A	19880304	199421	E
			EP 1993119023	A	19880304		
EP 374248	A4	19910515	EP 1992201146	A	19870715	199516	E
EP 374248	B1	19950517	EP 1988902239	A	19880304	199524	E
			WO 1988JP239	A	19880304		
DE 3853826	G	19950622	DE 3853826	A	19880304	199530	E
			EP 1988902239	A	19880304		
			WO 1988JP239	A	19880304		
EP 596539	A3	19971001	EP 1988902238	A	19880304	199749	E
			EP 1993119022	A	19880304		
EP 599314	A3	19971001	EP 1988902239	A	19880304	199749	E
			EP 1993119023	A	19880304		
EP 596539	B1	20000112	EP 1988902239	A	19880304	200008	E
			EP 1993119022	A	19880304		
DE 3856390	G	20000217	DE 3856390	A	19880304	200016	E
			EP 1993119022	A	19880304		
EP 599314	B1	20011024	EP 1988902239	A	19880304	200169	E
			EP 1993119023	A	19880304		
DE 3856499	G	20011129	DE 3856499	A	19880304	200202	E
			EP 1993119023	A	19880304		

Priority Applications (no., kind, date): JP 198748821 A 19870305; JP 198748822 A 19870305; JP 198748823 A 19870305; JP 198748824 A 19870305; JP 198748825 A 19870305; JP 198748826 A 19870305

**Patent Details**

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1988006426	A	JA	89	19		
National Designated States,Original	US					
Regional Designated States,Original	BE DE FR GB IT NL SE					
EP 374248	A	EN				
Regional Designated States,Original	BE DE FR GB IT NL SE					

US 5046505	A	EN	38			
EP 596539	A2	EN	43	19	Related to application	EP 1988902239
Regional Designated States,Original	BE DE FR GB IT NL SE					
EP 599314	A2	EN	41	19	Related to application	EP 1988902239
Regional Designated States,Original	BE DE FR GB IT NL SE					
EP 374248	A4	EN				
EP 374248	B1	EN	47	19	PCT Application	WO 1988JP239
					Based on OPI patent	WO 1988006426
Regional Designated States,Original	DE FR IT SE					
DE 3853826	G	DE			Application	EP 1988902239
					PCT Application	WO 1988JP239
					Based on OPI patent	EP 374248
					Based on OPI patent	WO 1988006426
EP 596539	A3	EN			Division of application	EP 1988902238
					Division of patent	EP 374248
EP 599314	A3	EN			Division of application	EP 1988902239
					Division of patent	EP 374248
EP 596539	B1	EN			Division of application	EP 1988902239
					Division of patent	EP 374248
Regional Designated States,Original	DE FR GB					
DE 3856390	G	DE			Application	EP 1993119022
					Based on OPI patent	EP 596539
EP 599314	B1	EN			Division of application	EP 1988902239
					Division of patent	EP 374248
Regional Designated States,Original	DE GB					
DE 3856499	G	DE			Application	EP 1993119023
					Based on OPI patent	EP 599314

### Alerting Abstract WO A

A switch is used for setting parameters such as the outer diameter of a catheter, and a probe detects the temperature of a liquid indicator to be injected into a blood vessel according to a dilution method. A second switch manually inputs the temperature of the liquid indicator. The manually input liquid temperature data and the detected liquid temperature data may be selectively switched. A catheter has an opening for admitting the liquid indicator, a first thermistor for measuring the blood temperature diluted with the liquid indicator, and a second thermistor for detecting a thermal equilibrium temperature reached when cooled by the blood.

A change in the blood temperature detected with the first thermistor is detected for initiating area integration of a dilution curve according to the theory of a dilution method. The cardiac output is continuously calculated from the thermal equilibrium temperature detected with the second thermistor, and recorded w.r.t. time.

**Title Terms /Index Terms/Additional Words:** CARDIAC; OUTPUT; MONITOR; BASED; DILUTE; METHOD; TWO; THERMISTOR; MEASURE; BLOOD; TEMPERATURE; LIQUID; INDICATE; DETECT; THERMAL; EQUILIBRIUM; CATHETER; ECG

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/02; A61B-005/029			Main		"Version 7"
G06F-019/00; A61B-005/0275; A61B-005/028			Secondary		"Version 7"
A61B-0005/0275	A	I		R	20060101
A61B-0005/028	A	I		R	20060101
A61B-0005/029	A	N		R	20060101
G06F-0017/00	A	I		R	20060101
A61B-0005/026	C	I		R	20060101
G06F-0017/00	C	I		R	20060101

US Classification, Issued: 128713000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01A1; S05-D01X

17/5/29 (Item 28 from file: 350) [Links](#)

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0002457919

WPI Acc no: 1982-B5666E/

**Examining functioning of patients lung system - has inspiration and expiration valves controlled by flow and pressure detectors to minimise flow resistance**

Patent Assignee: JAEGER E (JAEG-I); JAEGER GMBH ERNST (JAGR)

Inventor: DORSCH A

Patent Family ( 4 patents, 8 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 45388	A	19820210	EP 1981105303	A	19810708	198207	B
DE 3029155	A	19820225	DE 3029155	A	19800731	198209	E
			DE 3029155	A	19800731		
EP 45388	B	19841031	EP 1981105303	A	19810708	198444	E
DE 3166947	G	19841206	DE 3029155	A	19800731	198450	E

Priority Applications (no., kind, date): DE 3029155 A 19800731

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
EP 45388	A	DE	14		
Regional Designated States,Original	BE CH DE FR GB IT LI NL				
EP 45388	B	DE			
Regional Designated States,Original	BE CH DE FR GB IT LI NL				

**Alerting Abstract EP A**

The patient respirates into a tube (10) coupled to a flow detectors (56,58) and via valves (22,24,26,28) to respiratory air lines (30,32,34,36). A pressure detector (18) measures the pressure in the respiratory tube (10). The valves open and close during inspiration and expiration and are controlled by the flow detector and the pressure detector. The pressure detector causes one or more valves to open when the pressure in the tube exceeds a given minimum. The flow detector causes one or more valves to close when the respiratory air flow drops below a given value.

The operation of the valves is controlled by pressure and flow and is therefore clearly defined and the patient experiences no 'feedback' from the valves. The respiratory air also experiences little or no resistance to flow which increases the precision and reliability of the measurements. The outputs of the two detectors are connected to the set and reset inputs of two flipflops (62,64) whose outputs control the valves.

**Title Terms /Index Terms/Additional Words:** FUNCTION; PATIENT; LUNG; SYSTEM; INSPIRATION; EXPIRE; VALVE; CONTROL; FLOW; PRESSURE; DETECT; MINIMISE; RESISTANCE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/08			Main		"Version 7"

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01C

24/5/1 (Item 1 from file: 350) [Links](#)

Derwent WPIX

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0013204640 *Drawing available*

WPI Acc no: 2003-288899/

Related WPI Acc No: 2003-089764

XRPX Acc No: N2003-229726

**Cryotreatment system for ablating tumorous tissue, has thermocouples provided in contact monitor lead extending through elongated portion to cooling chamber, for sensing temperature of contact tissue**

Patent Assignee: CARROLL S (CARR-I); CRYOCATH TECHNOLOGIES INC (CRYO-N) ; KLEIN G (KLEI-I)

Inventor: ABOUD M; ARLESS S G; CARROLL S; KLEIN G; MILDER F L; WITTENBERGER D

Patent Family ( 2 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20030009160	A1	20030109	US 1999393461	A	19990910	200328	B
			US 2002237376	A	20020909		
US 6730077	B2	20040504	US 2002237376	A	20020909	200430	E

Priority Applications (no., kind, date): US 1999393461 A 19990910; US 2002237376 A 20020909

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20030009160	A1	EN	9	4	Continuation of application	US 1999393461
					Continuation of patent	US 6471693

**Alerting Abstract US A1**

**NOVELTY** - A catheter (110) has an elongated portion (110b) and a tip (110c) having a cooling chamber (3) through which cooling fluid passes to cool a treatment wall (7) in contact with body tissue. A contact monitor lead extending through the elongated portion to the cooling chamber, has thermocouples (5a,5b) which provide signals indicative of temperature of the tissue to a monitor.

**USE** - For treatment of cardiac arrhythmia conduction tissue site and for ablating tumorous, diseased, precancerous or congenitally abnormal tissue in various vessel or organ systems.

**ADVANTAGE** - Enables exact monitoring of the predetermined tissue site and a more effective cooling of the tissue.

**DESCRIPTION OF DRAWINGS** - The figure shows the cryotreatment system.

3cooling chamber

5a,5bthermocouples

7treatment wall

110catheter

110belongated portion

110ctip

**Title Terms /Index Terms/Additional Words:** SYSTEM; ABLATE; TUMOUR; TISSUE; THERMOCOUPLE; CONTACT; MONITOR; LEAD; EXTEND; THROUGH; ELONGATE; PORTION; COOLING; CHAMBER;

SENSE; TEMPERATURE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/02			Main		"Version 7"

US Classification, Issued: 606021000, 606023000, 606021000, 606023000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-B01A; S05-B05; S05-B06; S05-D01E

24/5/2 (Item 2 from file: 350) [Links](#)

Derwent WPIX

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0013011493 *Drawing available*

WPI Acc no: 2003-089764/

Related WPI Acc No: 2003-288899

XRPX Acc No: N2003-070795

**Cryotreatment system for destructing tissues, has controller that indicates tissue contact in response to contact monitor lead that extends through elongated housing of cryotreatment unit to each portion of outer shell**

Patent Assignee: CRYOCATH TECHNOLOGIES INC (CRYO-N)

Inventor: CARROLL S; KLEIN G

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6471693	B1	20021029	US 1999393461	A	19990910	200308	B

Priority Applications (no., kind, date): US 1999393461 A 19990910

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 6471693	B1	EN	8	4	

**Alerting Abstract US B1**

NOVELTY - A cooling region has an interior through which the cooling fluid passes to cool its outer shell. The outer shell has a contact monitor lead extending through an elongated housing of a cyrotreatment unit, to each portion of the outer shell for developing signal which indicates the tissue contact. A controller indicates the tissue

contact in response to the contact monitor lead.

**DESCRIPTION** - An INDEPENDENT CLAIM is included for cryotreatment probe system.

**USE** - For destruction of tissues of ablation of tumorous, diseased, precancerous or congenitally abnormal tissues in various vessel or organ system.

**ADVANTAGE** - Since the portion of the catheter that has contacted body tissue are cooled, the tissue contacts are controlled effectively.

**DESCRIPTION OF DRAWINGS** - The figure shows an illustrative view of the cryoablation catheter.

**Title Terms /Index Terms/Additional Words:** SYSTEM; DESTROY; TISSUE; CONTROL; INDICATE; CONTACT; RESPOND; MONITOR; LEAD; EXTEND; THROUGH ; ELONGATE; HOUSING; UNIT; PORTION; OUTER; SHELL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/02			Main		"Version 7"

US Classification, Issued: 606021000, 606023000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B06

24/5/3 (Item 3 from file: 350) [Links](#)

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0011208725 *Drawing available*

WPI Acc no: 2002-147504/200219

Related WPI Acc No: 2006-019987

XRPX Acc No: N2002-111864

**System for efficient delivery of RF energy to cardiac tissue for treating e.g. fibrillation, by ablating cardiac tissue; controls amount of RF power to provide gradual increase of power in real-time during initial ramp-up phase**

Patent Assignee: AGILITY CAPITAL LLC (AGIL-N); CARDIMA INC (CARD-N); CHAN E K Y (CHAN-I); NASAB M (NASA-I)

Inventor: CHAN E K Y; NASAB M

##### Patent Family ( 9 patents, 95 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2001087172	A1	20011122	WO 2001US15346	A	20010514	200219	B
AU 200161486	A	20011126	AU 200161486	A	20010514	200222	E
EP 1280467	A1	20030205	EP 2001935386	A	20010514	200310	E

			WO 2001US15346	A	20010514		
JP 2003533267	W	20031111	JP 2001583643	A	20010514	200375	E
			WO 2001US15346	A	20010514		
CN 1440258	A	20030903	CN 2001812407	A	20010514	200380	E
US 20040006337	A1	20040108	WO 2001US15346	A	20010514	200404	E
			US 2003333113	A	20030114		
US 20050010206	A1	20050113	US 2000203847	P	20000512	200506	E
			WO 2001US15346	A	20010514		
			US 2003333113	A	20030114		
			US 2004846260	A	20040514		
US 6936047	B2	20050830	US 2000203847	P	20000512	200557	E
			WO 2001US15346	A	20010514		
			US 2003333113	A	20030114		
AU 2001261486	A8	20051006	AU 2001261486	A	20010514	200612	E

Priority Applications (no., kind, date): US 2004846260 A 20040514; US 2003333113 A 20030114; WO 2001US15346 A 20010514; US 2000203847 P 20000512

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2001087172	A1	EN	46	10		
National Designated States, Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Regional Designated States, Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200161486	A	EN			Based on OPI patent	WO 2001087172
EP 1280467	A1	EN			PCT Application	WO 2001US15346
					Based on OPI patent	WO 2001087172
Regional Designated States, Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2003533267	W	JA	50		PCT Application	WO 2001US15346
					Based on OPI patent	WO 2001087172
US 20040006337	A1	EN			PCT Application	WO 2001US15346
US 20050010206	A1	EN			Related to Provisional	US 2000203847
					C-I-P of application	WO 2001US15346
					C-I-P of application	US 2003333113
US 6936047	B2	EN			Related to Provisional	US 2000203847
					PCT Application	WO 2001US15346
					Based on OPI patent	WO 2001087172



AU 2001261486	A8	EN		Based on OPI patent	WO 2001087172
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# Alerting Abstract WO A1

**NOVELTY** - Several temperature sensors may be positioned in proximity to each of ablation electrodes for measuring the temperature of cardiac tissue in contact with the ablation electrodes. An information processor and RF output controller control the amount of RF power delivered through the electrical coupling to provide a gradual increase in RF power calculated in real-time during an initial ramp-up phase.

**DESCRIPTION** - to limit the delivery of RF power through the electrical coupling based on the temperature of cardiac tissue in contact with the series of ablation electrodes, thereby reducing the likelihood of coagulum formation during delivery of RF energy to cardiac tissue.

An **INDEPENDENT CLAIM** is included for:

- A. a method for forming a cardiac lesion by delivering RF energy from an RF generator to an ablation site of cardiac tissue using an ablation catheter with an ablation electrode

**USE** - For using RF energy to treat certain cardiac abnormalities, such as fibrillation, by ablating cardiac tissue.

**ADVANTAGE** - Provides efficient delivery of RF energy to cardiac tissue with an ablation catheter, for yielding consistently effective RF ablation procedures and improved patient outcomes.

**DESCRIPTION OF DRAWINGS** - The drawing shows a schematic block diagram of an information processor and RF output controller in accordance with the invention.

**Title Terms /Index Terms/Additional Words:** SYSTEM; EFFICIENCY; DELIVER; RF; ENERGY; CARDIAC; TISSUE; TREAT; FIBRILLATE; ABLATE; CONTROL; AMOUNT; POWER; GRADUAL; INCREASE; REAL; TIME; INITIAL; RAMP; UP; PHASE

## Class Codes

### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/12; A61B-018/14; A61B-018/18			Main		"Version 7"

US Classification, Issued: 606041000, 606041000, 606034000, 606034000, 606032000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B

24/5/4 (Item 4 from file: 350) [Links](#)

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0011098432 *Drawing available*

WPI Acc no: 2002-034184/200204

Related WPI Acc No: 2003-288771; 2004-107963; 2005-057206

XRPX Acc No: N2002-026354

**Vascular thermography catheter for measuring temperature of vascular tissue, includes thermal sensors connected to remote device by insulated wire and mounted on resiliently biased projections depended from flexible catheter body**

Patent Assignee: DIAMANTOPOULOS L (DIAM-I); LANGENHOVE G V (LANG-I); THERMOCORE MEDICAL SYSTEMS NV SA (THER-N)

Inventor: DIAMANTOPOULOS L; LANGENHOVE G V; VAN LANGENHOVE G; VAN LANGENHOVE G N T S S

Patent Family ( 10 patents, 92 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2001074263	A1	20011011	WO 2001EP4401	A	20010404	200204	B
AU 200156303	A	20011015	AU 200156303	A	20010404	200209	E
EP 1267736	A1	20030102	EP 2001929576	A	20010404	200310	E
			WO 2001EP4401	A	20010404		
US 20030120171	A1	20030626	WO 2001EP4401	A	20010404	200343	E
			US 2002169523	A	20021015		
JP 2003528687	W	20030930	JP 2001572010	A	20010404	200365	E
			WO 2001EP4401	A	20010404		
EP 1267736	B1	20041103	EP 2001929576	A	20010404	200475	E
			WO 2001EP4401	A	20010404		
DE 60106887	E	20041209	DE 60106887	A	20010404	200481	E
			EP 2001929576	A	20010404		
			WO 2001EP4401	A	20010404		
EP 1504725	A1	20050209	EP 2001929576	A	20010404	200512	E
			EP 200425903	A	20010404		
ES 2231484	T3	20050516	EP 2001929576	A	20010404	200535	E
DE 60106887	T2	20051103	DE 60106887	A	20010404	200572	E
			EP 2001929576	A	20010404		
			WO 2001EP4401	A	20010404		

Priority Applications (no., kind, date): EP 2000870196 A 20000908; WO 2000BE96 A 20000821; WO 2000BE38 A 20000417; WO 2000BE31 A 20000404; GB 20016614 A 20010316

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 2001074263	A1	EN	34	8	
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE				

	KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200156303	A	EN			Based on OPI patent	WO 2001074263
EP 1267736	A1	EN			PCT Application	WO 2001EP4401
					Based on OPI patent	WO 2001074263
Regional Designated States,Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 20030120171	A1	EN			PCT Application	WO 2001EP4401
JP 2003528687	W	JA	42		PCT Application	WO 2001EP4401
					Based on OPI patent	WO 2001074263
EP 1267736	B1	EN			PCT Application	WO 2001EP4401
					Based on OPI patent	WO 2001074263
Regional Designated States,Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
DE 60106887	E	DE			Application	EP 2001929576
					PCT Application	WO 2001EP4401
					Based on OPI patent	EP 1267736
					Based on OPI patent	WO 2001074263
EP 1504725	A1	EN			Division of application	EP 2001929576
					Division of patent	EP 1267736
Regional Designated States,Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
ES 2231484	T3	ES			Application	EP 2001929576
					Based on OPI patent	EP 1267736
DE 60106887	T2	DE			Application	EP 2001929576
					PCT Application	WO 2001EP4401
					Based on OPI patent	EP 1267736
					Based on OPI patent	WO 2001074263

#### Alerting Abstract WO A1

**NOVELTY** - The catheter comprises a flexible body (14,15,18), at least two thermal sensors (10), e.g. thermistors, mounted on resiliently biased projections (11) depended from the body, and a carrier (13) for transmitting data on the temperature at the vascular wall from the sensors to a remote device.

**DESCRIPTION** - The projections are extensible radially from the longitudinal axis of the catheter body. They lie parallel to the axis and against the bias in the retracted configuration, and are extended radially from the body, with the bias, to contact the vascular wall in the deployed configuration.

**USE** - For measuring and mapping the temperature of vascular tissue. In particular, for locating inflamed or unstable atherosclerotic plaque in a blood vessel.

**ADVANTAGE** - Does not require the use of contrast media, which could be damaging to patients with kidney disease or injury and patients with blood clotting problems, as used in angiography procedures. The catheter is able

not only to locate plaque in arteries but also to evaluate whether it is inflamed and/or unstable.

**DESCRIPTION OF DRAWINGS** - The drawing shows a side view of the distal tip of the catheter in its deployed configuration.

10 Thermal sensor

11 Projections

12 Thermally conducting epoxy glue

13 Insulated wire

14 Central lumen

15 Intermediate lumen

16 Angioplasty guide wire

17 Guide member

18 Sheath

**Title Terms /Index Terms/Additional Words:** VASCULAR; THERMOGRAPHIC; CATHETER; MEASURE; TEMPERATURE; TISSUE; THERMAL; SENSE; CONNECT; REMOTE; DEVICE; INSULATE; WIRE; MOUNT; RESILIENT; BIAS; PROJECT; FLEXIBLE; BODY

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/06; A61B-018/08; A61B-005/00			Main		"Version 7"

US Classification, Issued: 600549000, 607102000

File Segment: EngPI; EPI;

DWPI Class: S02; S03; S05; T01; P31

Manual Codes (EPI/S-X): S02-K08A; S03-B01E9; S05-D01E; T01-C08B; T01-H07C3E; T01-J06A

24/5/5 (Item 5 from file: 350) [Links](#)

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0003701055

WPI Acc no: 1986-145385/

**Monitoring appts. for patients osmotic pressure in situ - comprises catheter with lumens connected to osmotic and hydrostatic pressure sensors and connected through hollow cellulose acetate fibrils**

Patent Assignee: HIMPENS J (HIMP-I)

Inventor: HIMPENS J M

##### Patent Family ( 5 patents, 12 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 183131	A	19860604	EP 1985114397	A	19851113	198623	B

US 4603699	A	19860805	US 1984673290	A	19841120	198634	E
JP 61191963	A	19860826	JP 1985260965	A	19851120	198640	E
EP 183131	B	19900207	EP 1985114397	A	19851113	199006	E
DE 3575856	G	19900315				199012	E

Priority Applications (no., kind, date): US 1984673290 A 19841120

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
EP 183131	A	EN	12	2	
Regional Designated States,Original	AT BE CH DE FR GB IT LI LU NL SE				
EP 183131	B	EN			
Regional Designated States,Original	AT BE CH DE FR GB IT LI LU NL SE				

#### Alerting Abstract EP A

The appts. comprises a catheter having two (12,14) lumens connected to an osmotic pressure sensor and a third lumen (24) connected to hydrostatic pressure sensor. The first two lumens (12,14) are fluidly continuous, connected through six hollow fibrils (16). Pressure in the first two lumens (12,14) is added to the pressure of the third lumen to determine colloid osmotic pressure. The fibrils (16) are made of a cellulose acetate material permeable to substances having a molecular weight loss than 30,000 and filled with nylon filaments.

The fibrils (16) are exposed to the bloodstream through a port (22) in the catheter (10) which also provides an external opening for the third lumen. Fluid in the fibrils (16) is pulsed to remove debris from the surfaces of the fibrils (16).

ADVANTAGE - A more effective monitoring osmotic pressure, minimising risk to patients through effects of treatment.

**Title Terms /Index Terms/Additional Words:** MONITOR; APPARATUS; PATIENT; OSMOSIS; PRESSURE; SITU; COMPRISE; CATHETER; LUMEN; CONNECT; HYDROSTATIC; SENSE; THROUGH; HOLLOW; CELLULOSE; ACETATE; FIBRIL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"
G01N-013/04; G01N-033/49			Secondary		"Version 7"

US Classification, Issued: 128632000, 073064470, 128637000, 128673000, 128748000

File Segment: EngPI; EPI;  
DWPI Class: S03; S05; P31

**Manual Codes (EPI/S-X): S03-F04; S05-D01B1**

27/5/1 (Item 1 from file: 350) [Links](#)

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0013081008 *Drawing available*

WPI Acc no: 2003-161593/200316

XRPX Acc No: N2003-127742

**Blood circulation moving condition measuring method for evaluating pharmacological effect, involves removing ligation at side of center and tip by pulling out catheter after incision is stitched**

Patent Assignee: KANSAI TECHNOLOGY LICENSING ORG CO LTD (KANS-N); KANSAI TLO KK (KANS-N); MATSUMORI A (MATS-I); MEDICAL MICROTECHNOLOGY INC (MEDI-N); NISHIO R (NISH-I)

Inventor: MATSUMORI A; NISHIO R

Patent Family ( 4 patents, 2 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
JP 2003010141	A	20030114	JP 2001200975	A	20010702	200316	B
US 20030093000	A1	20030515	US 2002188698	A	20020701	200335	E
US 6695788	B2	20040224	US 2002188698	A	20020701	200415	E
JP 3731071	B2	20060105	JP 2001200975	A	20010702	200603	E

Priority Applications (no., kind, date): JP 2001200975 A 20010702

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
JP 2003010141	A	JA	15	10		
JP 3731071	B2	JA	15		Previously issued patent	JP 2003010141

#### Alerting Abstract JP A

NOVELTY - A ligation at the center and the tip is removed by pulling out a catheter after an incision is stitched. Blood pressure and volume of heart are simultaneously measured. The catheter is extracted until it extends between the center ligation part and the incision.

USE - For evaluating pharmacological effect and therapeutic effect to experimental animal e.g. mouse.

ADVANTAGE - Ensures correct evaluation of medicine influence to experimental animal. Increases measurement effectiveness.

DESCRIPTION OF DRAWINGS - The figure shows the volume calibration chart of a conductance catheter. (The drawing includes non-English language text).

**Title Terms /Index Terms/Additional Words:** BLOOD; CIRCULATE; MOVE; CONDITION; MEASURE; METHOD; EVALUATE; PHARMACOLOGICAL; EFFECT; REMOVE ; LIGATURE; SIDE; TIP; PULL; CATHETER; AFTER; INCISION; STITCH

#### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/02; A61B-005/0295			Main		"Version 7"
A61B-019/00; A61B-005/0215; A61D-001/00; A61D-013/00			Secondary		"Version 7"
A61B-0005/0215	A	I	L	B	20060101
A61B-0005/0295	A	I	F	B	20060101
A61D-0001/00	A	I	L	B	20060101
A61D-0013/00	A	I	L	B	20060101
A61B-0005/026	C	I	F	B	20060101

US Classification, Issued: 600486000, 600486000, 600485000, 600507000, 128898000

File Segment: EngPI; EPI;

DWPI Class: S05; P31; P32

Manual Codes (EPI/S-X): S05-C05; S05-D01B1

27/5/2 (Item 2 from file: 350) [Links](#)

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0012488912 *Drawing available*

WPI Acc no: 2002-436179/200246

Related WPI Acc No: 2000-023446

XRPX Acc No: N2002-343354

**RF ablation system, adjusts the duty cycle of the power to the electrode in response to comparison between electrode/tissue interface and target temperatures**

Patent Assignee: CARDIAC PACEMAKERS INC (CARD-N); CASTELLANO T M (CAST-I); LOCKWOOD K E (LOCK-I); SHERMAN M L (SHER-I)

Inventor: CASTELLANO T M; LOCKWOOD K E; SHERMAN M L

Patent Family ( 6 patents, 23 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2002047565	A2	20020620	WO 2001US48220	A	20011211	200246	B
AU 200230812	A	20020624	AU 200230812	A	20011211	200267	E
US 20020161361	A1	20021031	US 199873392	A	19980505	200274	E
			US 2000501472	A	20000209		
			US 2000738032	A	20001213		
US 6558378	B2	20030506	US 199873392	A	19980505	200338	E
			US 2000501472	A	20000209		
			US 2000738032	A	20001213		



US 20030195501	A1	20031016	US 199873392	A	19980505	200369	E
			US 2000501472	A	20000209		
			US 2000738032	A	20001213		
			US 2003400770	A	20030327		
AU 2002230812	A8	20050915	AU 2002230812	A	20011211	200569	E

Priority Applications (no., kind, date): US 2003400770 A 20030327; US 2000501472 A 20000209; US 199873392 A 19980505; US 2000738032 A 20001213

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2002047565	A2	EN	46	14		
National Designated States, Original	AU CA JP					
Regional Designated States, Original	AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR					
AU 200230812	A	EN			Based on OPI patent	WO 2002047565
US 20020161361	A1	EN			Division of application	US 199873392
					C-I-P of application	US 2000501472
					Division of patent	US 6059778
					C-I-P of patent	US 6200314
US 6558378	B2	EN			Division of application	US 199873392
					C-I-P of application	US 2000501472
					Division of patent	US 6059778
					C-I-P of patent	US 6200314
US 20030195501	A1	EN			Division of application	US 199873392
					C-I-P of application	US 2000501472
					Continuation of application	US 2000738032
					Division of patent	US 6059778
					C-I-P of patent	US 6200314
					Continuation of patent	US 6558378
AU 2002230812	A8	EN			Based on OPI patent	WO 2002047565

#### Alerting Abstract WO A2

**NOVELTY** - The electrodes are positioned at the distal end of a catheter (30) proximal the biological tissue (26). A select number of the electrodes (32) have a temperature sensor associated with them for providing a temperature signal indicative of the temperature at the electrode/tissue interface. A generator operates under the control of a processor to apply power to each of the electrodes. The power has an associated phase angle and, within a time duration, a number of alternating on, and off periods, one set of adjacent on and off periods defining a duty cycle.

**DESCRIPTION** - The processor is programmed to determine the temperature at the electrode/tissue interface based on the temperature signals, compare the temperature to a target temperature and to adjust the power to the electrode accordingly. Such adjustments may comprise an increase or decrease in the duty cycle, a setting of the duty cycle to

zero followed by an incremental increase in the duty cycle or a power interrupt.

An INDEPENDENT CLAIM is given for a method of delivering energy to biological tissue whilst maintaining its temperature near a target temperature.

USE - In electro-physiological apparatus, when treating cardiac arrhythmia.

ADVANTAGE - Gives a structurally stable invasive ablation apparatus, capable of controlling the flow of current through, and temperature of, a biological site, so that lesions with controllable surface and depth characteristics may be produced and the ablation volume thus controlled.

DESCRIPTION OF DRAWINGS - The figure shows a schematic diagram of the ablation apparatus including a power control system, electrode device, and back-plate.

12 power control system

15 single power lead

16 electrode

24 back plate

26 biological tissue

30 EP catheter

31 handle

32 12 band electrodes

40 temperature sensors

**Title Terms /Index Terms/Additional Words:** RF; ABLATE; SYSTEM; ADJUST; DUTY; CYCLE; POWER; ELECTRODE; RESPOND; COMPARE; TISSUE; INTERFACE; TARGET; TEMPERATURE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/12; A61B-018/14; A61B-018/18			Main		"Version 7"

US Classification, Issued: 606034000, 606041000, 606034000, 606041000, 606034000, 606041000, 606042000, 606050000, 607102000, 607122000

File Segment: EngPI; EPI;

DWPI Class: S05; X25; P31

Manual Codes (EPI/S-X): S05-A01A; X25-B01B

27/5/3 (Item 3 from file: 350) [Links](#)

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0011081479 *Drawing available*

WPI Acc no: 2002-016857/200202

XRPX Acc No: N2002-013577

**Tissue ablation and maximum tissue subsurface temperature estimation system estimates maximum**

subsurface temperature, based on electrical signals indicating impedance between electrode unit and reference electrode

Patent Assignee: WEBSTER C (WEBS-I)

Inventor: WEBSTER W W

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6217574	B1	20010417	US 1998205625	A	19981203	200202	B
			US 1999234365	A	19990120		

Priority Applications (no., kind, date): US 1998205625 A 19981203; US 1999234365 A 19990120

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 6217574	B1	EN	20	11	Division of application	US 1998205625

Alerting Abstract US B1

**NOVELTY** - Programmable signal processor (6) activates two RF generators (7) to transmit respectively low level RF impedance current and RF ablation current to each electrode unit of split tip electrode (20). The processor estimates maximum subsurface temperature, based on received electrical signals indicative of impedance between each electrode unit and reference electrode (5) attached to exterior of patient.

**DESCRIPTION** - The system comprises a split tip electrode catheter comprising an elongated catheter structure (11) having proximal and distal ends and one lumen extending there through. A catheter tip section (12) at the distal end of the catheter structure, comprises section of flexible tubing (24) having proximal, distal ends and one lumen extending there through. The proximal end of the flexible tubing is fixedly attached to the distal end of the catheter structure. The catheter tip section has split tip electrode which has at least two electrically isolated electrode units fixedly attached to the distal end of the flexible housing. Each electrode unit comprises at least one irrigation passage. A programmable signal processor is electrically connected to two RF generator. Each electrode unit is electrically connected to the two RF generators. Electrical signals indicative of the impedance between each electrode unit and one indifferent electrode during transmission of RF ablation current are received and are separated from other received signals. Based on the received electrical signals, maximum subsurface temperature is estimated.

An **INDEPENDENT CLAIM** is also included for tissue ablation and subsurface temperature rise estimation method. **USE** - For electrophysiology catheter system.

**ADVANTAGE** - Allows the temperature of the electrode units to be controlled, so that greater amount of RF current is delivered through the electrode units without excessive temperature rise. **Monitoring** of impedance associated with each of the electrode units during ablation, allows electrophysiologist to continue to monitor which electrode units are in contact unit myocardium and hence whether the catheter tip has rolled or rotated during ablation.

**DESCRIPTION OF DRAWINGS** - The figure shows the schematic diagram of irrigated split tip electrode catheter and signal processing RF ablation system.

5 Reference electrode

6 Signal processor

7 RF generators

11 Catheter structure

12 Catheter tip section

20 Split tip electrode  
24 Flexible tubing

**Title Terms /Index Terms/Additional Words:** TISSUE; ABLATE; MAXIMUM; SUBSURFACE;  
TEMPERATURE; ESTIMATE; SYSTEM; BASED; ELECTRIC; SIGNAL ; INDICATE; IMPEDANCE;  
ELECTRODE; UNIT; REFERENCE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-018/14			Main		"Version 7"

US Classification, Issued: 606041000, 606034000, 607099000, 607105000, 607113000

File Segment: EngPI; EPI;

DWPI Class: S01; S03; S05; U24; P31

Manual Codes (EPI/S-X): S01-D05B; S03-B01C; S03-B01E9; S05-B03; S05-D01A1A; S05-D01E; U24-G01B5;  
U24-G03R

27/5/4 (Item 4 from file: 350) [Links](#)

Derwent WPIX

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0010461416 *Drawing available*

WPI Acc no: 2001-060954/200107

Related WPI Acc No: 1994-037124; 1994-058400; 1994-279414; 1995-006278; 1995-006284; 1995-006285;  
1995-098529; 1995-200153; 1995-240431; 1995-254879; 1995-263687; 1995-344425; 1995-357865; 1996-019735;  
1996-068670; 1996-068671; 1996-096969; 1996-238605; 1996-362423; 1996-424512; 1997-164984; 1997-164985;  
1997-393311; 1997-434801; 1997-434802; 1997-434803; 1997-434804; 1997-558641; 1997-558642; 1997-558643;  
1997-558644; 1997-558645; 1998-018166; 1998-018167; 1998-018168; 1998-018169; 1998-018252; 1998-100793;  
1998-120291; 1998-158711; 1998-168283; 1998-216998; 1998-506432; 1998-506433; 1998-506445; 1998-520783;  
1998-567504; 1999-044369; 1999-131796; 1999-131798; 1999-444300; 1999-444301; 1999-518497; 1999-518712;  
1999-527406; 1999-527407; 1999-579814; 1999-600987; 2000-013328; 2000-204831; 2000-237739; 2001-060948;  
2001-060949; 2001-060950; 2001-060951; 2001-060952; 2001-060953; 2001-060956; 2001-112019; 2001-137545;  
2001-159609; 2001-168439; 2001-201561; 2001-307949; 2001-307979; 2001-326969; 2001-327952; 2001-328305;  
2001-354656; 2001-432031; 2002-082278; 2002-088763; 2002-179338; 2002-214905; 2002-682392; 2002-696720;  
2003-103019; 2003-299180; 2003-341784; 2003-755001; 2003-765678; 2003-776578; 2004-200457; 2004-409950;  
2004-466625; 2004-625141; 2004-774396; 2005-080561; 2005-466603; 2005-552282; 2006-221319; 2006-260054;  
1999-444299; 1999-527726; 1999-620561

XRPX Acc No: N2001-045726

**Esophageal sphincter tissue treatment device has electrodes connected to RF energy source, which penetrate tissue region in esophageal sphincter and performs heating of tissue to form pattern of lesion**

Patent Assignee: CURON MEDICAL INC (CURO-N); EDWARDS S D (EDWA-I); GAISER J (GAIS-I); QIN J (QINJ-I); UTLEY D S (UTLE-I); WEST S H (WEST-I)

Inventor: CHIN J; EDWARDS S; EDWARDS S D; GAISER J; QIN J; UTLEY D S; WEST S; WEST S H

Patent Family ( 8 patents, 88 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2000066021	A1	20001109	WO 2000US12111	A	20000503	200107	B
AU 200049840	A	20001117	AU 200049840	A	20000503	200111	E
US 6464697	B1	20021015	US 199826296	A	19980219	200271	E
			US 1999304737	A	19990504		
US 20030023287	A1	20030130	US 199826296	A	19980219	200311	E
			US 1999304737	A	19990504		
			US 2002247153	A	20020919		
US 20050107829	A1	20050519	US 199826296	A	19980219	200534	E
			US 1999304737	A	19990504		
			US 2002247153	A	20020919		
			US 2004963025	A	20041012		
US 20060259028	A1	20061116	US 1996731372	A	19961011	200677	E
			US 199826296	A	19980219		
			US 1999304737	A	19990504		
			US 2002247153	A	20020919		
			US 2004963025	A	20041012		
			US 2006420712	A	20060526		
US 20060259029	A1	20061116	US 1996731372	A	19961011	200677	E
			US 199826296	A	19980219		
			US 1999304737	A	19990504		
			US 2002247153	A	20020919		
			US 2004963025	A	20041012		
			US 2006420714	A	20060526		
US 20060259030	A1	20061116	US 199826296	A	19980219	200677	E
			US 1999304737	A	19990504		
			US 2002247153	A	20020919		
			US 2004963025	A	20041012		
			US 2006420719	A	20060526		

Priority Applications (no., kind, date): US 1996731372 A 19961011; US 199826296 A 19980219; US 1999304737 A 19990504; US 2002247153 A 20020919; US 2004963025 A 20041012; US 2006420712 A 20060526; US 2006420714 A 20060526; US 2006420719 A 20060526

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 2000066021	A1	EN	130	83	
National	AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM				

Designated States,Original	EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW					
AU 200049840	A	EN			Based on OPI patent	WO 2000066021
US 6464697	B1	EN			C-I-P of application	US 199826296
					C-I-P of patent	US 6009877
US 20030023287	A1	EN			C-I-P of application	US 199826296
					Division of application	US 1999304737
					C-I-P of patent	US 6009877
					Division of patent	US 6464697
US 20050107829	A1	EN			C-I-P of application	US 199826296
					Division of application	US 1999304737
					Division of application	US 2002247153
					C-I-P of patent	US 6009877
					Division of patent	US 6464697
					Division of patent	US 6872206
US 20060259028	A1	EN			C-I-P of application	US 1996731372
					C-I-P of application	US 199826296
					Division of application	US 1999304737
					Division of application	US 2002247153
					Continuation of application	US 2004963025
					C-I-P of patent	US 5964755
					C-I-P of patent	US 6009877
					Division of patent	US 6464697
					Division of patent	US 6872206
US 20060259029	A1	EN			C-I-P of application	US 1996731372
					C-I-P of application	US 199826296
					Division of application	US 1999304737
					Division of application	US 2002247153
					Continuation of application	US 2004963025
					C-I-P of patent	US 5964755
					C-I-P of patent	US 6009877
					Division of patent	US 6464697
					Division of patent	US 6872206
US 20060259030	A1	EN			C-I-P of application	US 199826296
					Division of application	US 1999304737
					Division of application	US 2002247153
					Continuation of application	US 2004963025
					C-I-P of patent	US 6009877
					Division of patent	US 6464697

				Division of patent	US 6872206
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#### Alerting Abstract WO A1

**NOVELTY** - An expandable balloon like support structure (72) provided at front end of a catheter tube (30), has several flexible splines (58) forming a three-dimensional bag. Electrode (66) is provided in each spline. The electrodes are connected to RF energy source and penetrate tissue region to heat tissue for forming lesions. Each electrode has a **temperature** sensor for **measuring** the heating condition of **tissue**.

**DESCRIPTION** - An **INDEPENDENT CLAIM** is also included for esophageal sphincter tissue treating method.

**USE** - For treating dysfunction in body sphincters and adjoining tissues, e.g. in and around lower esophageal sphincter and cardia of stomach.

**ADVANTAGE** - Heats tissue to specific temperature range precisely, thus preserves and protects mucosal surface against thermal damage. Restores normal closure function to sphincters by simply forming lesions in sphincter tissue region.

**DESCRIPTION OF DRAWINGS** - The figure shows the perspective view of esophageal sphincter tissue treatment device.

30 Catheter tube

58 Flexible spline

66 Electrode

72 Support structure

**Title Terms /Index Terms/Additional Words:** OESOPHAGUS; SPHINCTER ; TISSUE; TREAT; DEVICE; ELECTRODE; CONNECT; RF; ENERGY; SOURCE; PENETRATE; REGION; PERFORMANCE; HEAT; FORM; PATTERN; LESION

#### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-0018/04	A	N		R	20060101
A61B-0018/12	A	I		R	20060101
A61B-0018/14	A	I		R	20060101
A61B-0018/18	A	I	F	B	20060101
A61B-0018/04	C	N		R	20060101
A61B-0018/12	C	I		R	20060101
A61B-0018/14	C	I		R	20060101

US Classification, Issued: 607101000, 607002000, 606041000, 607101000, 607133000, 606041000, 607101000, 607133000, 606041000, 607101000, 607133000, 606041000, 607101000

File Segment: EngPI; EPI;

DWPI Class: S05; P31; P32; P34

Manual Codes (EPI/S-X): S05-B02; S05-B03

27/5/5 (Item 5 from file: 350) Links

Derwent WPIX

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0009968634 *Drawing available*

WPI Acc no: 2000-270957/200023

Related WPI Acc No: 1997-165059; 1997-165061; 1997-258569; 1997-424707; 1997-470595; 1997-488764; 1997-488765; 1997-502809; 1998-426817; 1998-494593; 1999-131171; 1999-337443; 1999-357529; 1999-384134; 1999-428991; 1999-443090; 1999-468091; 1999-526902; 1999-633262; 2000-270956; 2000-364060; 2000-375207; 2000-440876; 2000-451177; 2003-089765; 2003-298306; 2003-625017; 2003-786388; 2003-895630; 2003-895848; 2004-058308; 2004-058443; 2004-223850; 2004-675669; 2005-079016; 2005-171774; 2005-383995; 2005-656906; 2001-089857

XRPX Acc No: N2000-202983

**Surgical device for necrosis induction, has multiple RF electrodes which are inserted in tissue site in curved form and tissue ablation is performed**

Patent Assignee: BALBIERZ D (BALB-I); LEE K S (LEEK-I); RITA MEDICAL SYSTEMS INC (RITA-N)

Inventor: BALBIERZ D; LEE K S

Patent Family ( 8 patents, 88 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2000013603	A1	20000316	WO 1999US20068	A	19990831	200023	B
AU 199960247	A	20000327	AU 199960247	A	19990831	200032	E
TW 402498	A	20000821	TW 1999115065	A	19990901	200117	E
US 20010001819	A1	20010524	US 1995515379	A	19950815	200130	E
			US 1997963239	A	19971103		
			US 199820182	A	19980206		
			US 199847845	A	19980325		
			US 1998148571	A	19980904		
			US 2001758326	A	20010110		
US 6235023	B1	20010522	US 1995515379	A	19950815	200130	E
			US 1997963239	A	19971103		
			US 199820182	A	19980206		
			US 199847845	A	19980325		
			US 1998148571	A	19980904		
EP 1109505	A1	20010627	EP 1999968614	A	19990831	200137	E
			WO 1999US20068	A	19990831		
JP 2002524130	W	20020806	WO 1999US20068	A	19990831	200266	E
			JP 2000568414	A	19990831		
US 6551311	B2	20030422	US 1995515379	A	19950815	200330	E
			US 1997963239	A	19971103		
			US 199820182	A	19980206		
			US 199847845	A	19980325		
			US 1998148571	A	19980904		



		US 2001758326	A	20010110		
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Priority Applications (no., kind, date): US 2001758326 A 20010110; US 199847845 A 19980325; US 199820182 A 19980206; US 1997963239 A 19971103; US 1995515379 A 19950815; US 1998148571 A 19980904

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2000013603	A1	EN	48	21		
National Designated States, Original	AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW.					
Regional Designated States, Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
AU 199960247	A	EN			Based on OPI patent	WO 2000013603
TW 402498	A	ZH				
US 20010001819	A1	EN			C-I-P of application	US 1995515379
					C-I-P of application	US 1997963239
					C-I-P of application	US 199820182
					C-I-P of application	US 199847845
					Continuation of application	US 1998148571
					C-I-P of patent	US 5683384
US 6235023	B1	EN			C-I-P of application	US 1995515379
					C-I-P of application	US 1997963239
					C-I-P of application	US 199820182
					C-I-P of application	US 199847845
					C-I-P of patent	US 5683384
					C-I-P of patent	US 5980517
EP 1109505	A1	EN			PCT Application	WO 1999US20068
					Based on OPI patent	WO 2000013603
Regional Designated States, Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2002524130	W	JA	44		PCT Application	WO 1999US20068
					Based on OPI patent	WO 2000013603
US 6551311	B2	EN			C-I-P of application	US 1995515379
					C-I-P of application	US 1997963239
					C-I-P of application	US 199820182
					C-I-P of application	US 199847845
					Continuation of application	US 1998148571
					C-I-P of patent	US 5683384

				C-I-P of patent	US 5980517
				C-I-P of patent	US 6132425
				Continuation of patent	US 6235023

#### Alerting Abstract WO A1

**NOVELTY** - The device has a catheter (12) with a sharp end, which accommodates two sets of RF electrodes and a central RF electrode (34). The RF electrodes are inserted in the tissue site from the catheter. The outer electrodes form a curved shape. The central electrode does not bend. A sensor (36) is mounted at central electrode tip for measuring the temperature at a tissue site.

**USE** - For necrosis induction during tumor treatment for treating cancerous tissues.

**ADVANTAGE** - Provides deployable electrodes for creating variety of different geometric cell necrosis lesions, thus specific and selective treatment is performed.

**DESCRIPTION OF DRAWINGS** - The figure shows the cross-sectional view of surgical device.

12 Catheter

34 Central RF electrode

36 Sensor

**Title Terms /Index Terms/Additional Words:** SURGICAL; DEVICE; NECROSIS; INDUCTION; MULTIPLE; RF; ELECTRODE; INSERT; TISSUE; SITE; CURVE; FORM; ABLATE; PERFORMANCE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/39; A61B-018/12; A61B-018/14; A61B-018/18			Main		"Version 7"
A61B-017/34			Secondary		"Version 7"

US Classification, Issued: 606041000, 607099000, 607101000, 606041000, 607101000, 606041000, 607101000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B03; S05-B05

27/5/6 (Item 6 from file: 350) [Links](#)

Derwent WPIX

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0009344774 *Drawing available*

WPI Acc no: 1999-277396/199923

XRPX Acc No: N1999-207938

**Radio frequency balloon catheter for causing thermal trauma to patent foramen ovale and method of use**

Patent Assignee: HEARTEN MEDICAL INC (HEAR-N)  
 Inventor: BROWN T R; NGUYEN H V; STAMBAUGH B D

Patent Family ( 2 patents, 81 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1999018870	A1	19990422	WO 1998US21440	A	19981009	199923	B
AU 199910775	A	19990503	AU 199910775	A	19981009	199937	E

Priority Applications (no., kind, date): US 199762954 P 19971010

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1999018870	A1	EN	21	6		
National Designated States,Original	AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
AU 199910775	A	EN			Based on OPI patent	WO 1999018870

**Alerting Abstract WO A1**

**NOVELTY** - The catheter has a sheath (11) catheter retaining a foramen ovale balloon catheter (16) which has an inflatable balloon (26) disposed at its distal end. At least two radio frequency electrodes (41, 42) are attached to the foramen ovale catheter within the balloon. The balloon is inflated with a radio frequency energy conducting fluid, heated by a supply of radio frequency energy (31) attached to the electrodes, thermally traumatising adjacent tissue in use. A thermocouple (43) attached within the balloon **monitors the temperature** within the balloon. **DETAILED DESCRIPTION** - An **INDEPENDENT CLAIM** is also included for a method using the catheter. **TECHNOLOGY FOCUS** - The balloon is able to resist deformation at high temperatures and is manufactured from poly-ethylene-terephthalate.

**USE** - Minimally invasive device for closing a patent foramen ovale.

**ADVANTAGE** - The method is least invasive and does not have the associated risk of an open heart procedure, is technically easy to perform and does not leave any foreign material behind. **DESCRIPTION OF DRAWING(S)** - The drawing shows a schematic plan view of the radio frequency balloon catheter and an axial cross sectional view of the distal end of the catheter. (11) Sheath catheter; (16) Foramen ovale balloon catheter; (26) Inflatable balloon; (31) Radio frequency energy supply; (41, 42) Radio frequency electrodes; (43) Thermocouple.

**Title Terms /Index Terms/Additional Words:** RADIO; FREQUENCY; BALLOON; CATHETER; CAUSE; THERMAL; TRAUMA; PATENT; METHOD; COMPRISE; SHEATH ; RETAIN; INFLATE; ENERGY; CONDUCTING; FLUID; HEAT; ELECTRODE; RECEIVE

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
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A61B-017/39			Main		"Version 7"
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File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B03; S05-B05

27/5/7 (Item 7 from file: 350) [Links](#)

Derwent WPIX

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0009124097 *Drawing available*

WPI Acc no: 1999-044368/

XRPX Acc No: N1999-032401

**Ablation device for use in treatment of tumour - has deploying member to deploy two piece electrode during which its one piece extends outwardly to one side of delivery catheter and other piece bends inwardly to other side of catheter**

Patent Assignee: IRVINE BIOMEDICAL INC (IRVI-N)

Inventor: CHIA W R; TU H

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5843020	A	19981201	US 1997834373	A	19970416	199904	B

Priority Applications (no., kind, date): US 1997834373 A 19970416

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 5843020	A	EN	10	5	

**Alerting Abstract US A**

The device consists of a delivery catheter (1) having a lumen inside which a semiflexible insert (9) is located. A two piece electrode (7) is mounted at the distal end of the insert, piece (31) secured to the distal end of an elongate shaft of the insert and piece (32) secured to the distal end of the piece (31), through a torsion spring (10). A hollow handle (4) is attached to the proximal end (3) of the catheter. An electrode deployment member located at the handle is connected to the proximal end of the insert.

A preformed shape for the two piece electrode at the retractable tip section of the insert is such that the piece (31) extends outwardly to one side of the catheter, when the electrode is deployed. The piece (32) bends inwardly to the opposite side of the catheter, to expose the body element of the piece (32) perpendicular to the catheter, the front side of the body element facing the distal direction of the catheter.

USE - For removal of prostatic adenomas, bladder tumours, uterus and urethra tumours or intestinal polyps.

ADVANTAGE - Performs treatment and reduction of undesired body tissues by minimally invasive manner.

Loosens target tissue for improved ablation treatment. **Monitors temperature** and controls delivered energy to control ablation amount.

**Title Terms /Index Terms/Additional Words:** ABLATE; DEVICE; TREAT ; TUMOUR; DEPLOY; MEMBER; TWO; PIECE; ELECTRODE; ONE; EXTEND; OUTWARD; SIDE ; DELIVER; CATHETER; BEND; INWARD

# Class Codes

## International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/20			Main		"Version 7"

US Classification, Issued: 604022000, 604049000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B03

27/5/8 (Item 8 from file: 350) [Links](#)

Derwent WPIX

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0008069196

WPI Acc no: 1997-164976/199715

XRAM Acc no: C1997-053154

XRPX Acc No: N1997-135893

**Needle-probe for electrical potential sensing and RF tissue ablation - comprises conductors coupled to electrodes spaced by insulation and epoxy! resin stiffener, for heart muscle to precisely correct arrhythmia**

Patent Assignee: CARDIAC CRC NOMINEES PTY LTD (CARD-N); DALY M (DALY-I) ; KOEVSKI I (KOEV-I); KOVOOR P (KOVO-I); ROSS D (ROSS-I); SODHI C (SODH-I); WESTERN SYDNEY AREA HEALTH SERVICE (WSYD-N)

Inventor: DALY M; KOEVSKI I; KOVOOR P; ROSS D; SODHI C

## Patent Family ( 7 patents, 69 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1997006727	A1	19970227	WO 1996AU489	A	19960802	199715	B
AU 199666070	A	19970312	AU 199666070	A	19960802	199727	E
EP 850015	A1	19980701	EP 1996925601	A	19960802	199830	E
			WO 1996AU489	A	19960802		
AU 701125	B	19990121	AU 199666070	A	19960802	199915	E
US 6096035	A	20000801	US 199831861	A	19980227	200039	NCE
EP 850015	B1	20040218	EP 1996925601	A	19960802	200413	E
			WO 1996AU489	A	19960802		

DE 69631591	E	20040325	DE 69631591	A	19960802	200423	E
			EP 1996925601	A	19960802		
			WO 1996AU489	A	19960802		

Priority Applications (no., kind, date): US 199831861 A 19980227; AU 19954874 A 19950818

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1997006727	A1	EN	19	6		
National Designated States,Original	AL AM AT AU AZ BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN					
Regional Designated States,Original	AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG					
AU 199666070	A	EN			Based on OPI patent	WO 1997006727
EP 850015	A1	EN			PCT Application	WO 1996AU489
					Based on OPI patent	WO 1997006727
Regional Designated States,Original	DE FR GB IT					
AU 701125	B	EN			Previously issued patent	AU 9666070
					Based on OPI patent	WO 1997006727
EP 850015	B1	EN			PCT Application	WO 1996AU489
					Based on OPI patent	WO 1997006727
Regional Designated States,Original	DE FR GB IT					
DE 69631591	E	DE			Application	EP 1996925601
					PCT Application	WO 1996AU489
					Based on OPI patent	EP 850015
					Based on OPI patent	WO 1997006727

#### Alerting Abstract WO A1

A needle-like probe for electrical potential sensing and RF ablation of tissue comprises:

(a) an elongate body with electrodes (7) spaced by insulating material (8) and sufficiently rigid to be inserted into tissue; and

(b) electrical conductor(s) (10, 11) coupled to each electrode delivering RF energy to the tissue surrounding the electrode and sensing the electrical potential of the tissue.

Also claimed are:

(i) a multipolar trans-mural probe with the needle-shaped shank extending from a head;

(ii) method of mfr. of the multipolar trans-mural probe; and

(iii) an array of multiple probes.

The electrode(s) is a metal band, and pref. has a sensor for temp. at the electrode-tissue interface.

The probe may have four electrodes spaced by insulation, and forming a tubular structure with the interior filled with matrix material (16), opt. with a central rigid, pref. metal or other rigid material, stiffener (14).

The body may be arcuate or curved.

The probe comprises thermocouple(s), and a solid steel needle embedded in epoxy resin as stiffener.

USE - Partic. for use in open-chest surgery to identify and destroy heart muscle causing cardiac arrhythmia, or in RF ablation of tumours or other abnormalities in the brain. Used to treat e.g. racehorses or in industry.

ADVANTAGE - Permits more precise treatment.

**Title Terms /Index Terms/Additional Words:** NEEDLE; PROBE; ELECTRIC; POTENTIAL; SENSE; RF; TISSUE; ABLATE; COMPRISE; CONDUCTOR; COUPLE ; ELECTRODE; SPACE; INSULATE; POLYEPOXIDE; RESIN; STIFFEN; HEART; MUSCLE; PRECISION; CORRECT; ARRHYTHMIC

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/36; A61B-005/04			Main		"Version 7"
A61B-005/0408; A61N-001/06			Secondary		"Version 7"

US Classification, Issued: 606041000, 607101000, 607102000, 600374000

File Segment: CPI; EngPI; EPI

DWPI Class: A96; S05; P31; P34

Manual Codes (EPI/S-X): S05-B03; S05-D01D

Manual Codes (CPI/A-N): A05-A01E; A12-V03D

27/5/9 (Item 9 from file: 350) [Links](#)

Derwent WPIX

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0008024814 *Drawing available*

WPI Acc no: 1997-118195/199711

Related WPI Acc No: 1995-193919; 1996-029649; 1996-139409; 1996-208540; 1997-118194; 1997-258568; 1997-502809; 1998-239054; 1998-494593; 1999-468091; 2000-364060; 2000-440876; 2002-414467; 2003-089765; 2003-625017; 2003-786388; 2003-895630; 2003-895848; 2004-058443; 2004-675669; 2005-171774; 2005-383995; 2005-656906

XRPX Acc No: N1997-097448

**Radio Frequency apparatus - includes deflectable introducer which is advanced in and out of distal ends of needle electrodes to measure temperature of tissue on ablation volume**

Patent Assignee: ZOMED INT INC (ZOME-N)

Inventor: BAKER J; EDWARDS S D; LAX R G; STRUL B

##### Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
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US 5599346	A	19970204	US 1993148439	A	19931108	199711	B
			US 1994295200	A	19940824		

Priority Applications (no., kind, date): US 1993148439 A 19931108; US 1994295200 A 19940824

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 5599346	A	EN	31	13	C-I-P of application	US 1993148439
					C-I-P of patent	US 5458597

#### Alerting Abstract US A

The radio frequency (RF) treatment apparatus includes a first catheter with a catheter lumen and a first catheter distal end. A first needle electrode is positioned in the first catheter lumen. An insulator sleeve is positioned in a slidable surrounding relationship to the first needle electrode to define a first needle ablation surface. A second needle electrode is inserted in a second catheter and has a second insulator sleeve. An RF power source is connected to the needle electrodes and provides RF ablation between the two needles in an ablation volume.

A deflectable introducer has a laterally deflectable distal end and an ablation volume temperature sensor positioned at the deflectable introducer distal end. The deflectable introducer distal end is advanced in and out of one of the distal ends of the needle electrodes to measure a temperature of tissue in the ablation volume. The apparatus is connected to the introducer for advancing the introducer in and out of the distal end of the electrodes.

USE/ADVANTAGE - Provides bipolar ablation between two or more electrodes. **Temperature can be measured in the ablation volume** to determine extent of ablation.

**Title Terms /Index Terms/Additional Words:** RADIO; FREQUENCY; APPARATUS; DEFLECT; INTRODUCING; ADVANCE; DISTAL; END; NEEDLE; ELECTRODE; MEASURE; TEMPERATURE; TISSUE; ABLATE; VOLUME

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/39			Main		"Version 7"

US Classification, Issued: 606041000, 606048000, 606038000, 606039000, 607101000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-B03

27/5/10 (Item 10 from file: 350) [Links](#)

Derwent WPIX

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0006796818 *Drawing available*  
WPI Acc no: 1994-183189/199422  
XRPX Acc No: N1994-144671

**Fluid cooled ablation catheter for treatment of e.g cardiac arrhythmia - has long flexible catheter with fluid delivery tube through catheter centre, and electrosurgery ablation electrodes wound spirally around outside**

Patent Assignee: AMERICAN CARDIAC ABLATION CO INC (AMCA-N)

Inventor: NARDELLA P C

Patent Family ( 6 patents, 20 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1994011059	A1	19940526	WO 1993US10465	A	19931101	199422	B
US 5334193	A	19940802	US 1992975662	A	19921113	199430	E
AU 199454563	A	19940608	AU 199454563	A	19931101	199435	E
EP 703803	A1	19960403	EP 1993925138	A	19931101	199618	E
			WO 1993US10465	A	19931101		
JP 8505544	W	19960618	WO 1993US10465	A	19931101	199648	E
			JP 1994512145	A	19931101		
EP 703803	A4	19970101	EP 1993925138	A	19931101	199841	E

Priority Applications (no., kind, date): US 1992975662 A 19921113

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1994011059	A1	EN	26	6		
National Designated States,Original	AU CA JP					
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
US 5334193	A	EN	9	6		
AU 199454563	A	EN			Based on OPI patent	WO 1994011059
EP 703803	A1	EN	1	6	PCT Application	WO 1993US10465
					Based on OPI patent	WO 1994011059
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE					
JP 8505544	W	JA	21		PCT Application	WO 1993US10465
					Based on OPI patent	WO 1994011059
EP 703803	A4	EN				

**Alerting Abstract WO A1**

The ablation catheter includes a fluid delivery system to limit the heating effects of ablation. The catheter (14) has a thin elongate and flexible form suited to delivery organs. In the centre of the catheter, a lumen (26) provides a fluid

pathway for cooling liquid. The lumen is connected by a tube (30) to a fluid delivery appts (28).  
 A pair of electrodes (18,20) are spirally located around the outside of the catheter. Typically these would cover the 8 mm of the distal end. The electrodes are connected by wires (22,24) to an energy delivery appts (12).  
 USE/ADVANTAGE - Cardiac ablation procedures for destroying heart tissue causing cardiac arrhythmias. Limits heat generated by ablation to allow faster and more controlled ablation.

**Title Terms /Index Terms/Additional Words:** FLUID; COOLING; ABLATE; CATHETER; TREAT; CARDIAC; ARRHYTHMIC; LONG; FLEXIBLE; DELIVER; TUBE; THROUGH; CENTRE; ELECTROSURGICAL; ELECTRODE; WOUND; SPIRAL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-017/39; A61N-001/05			Main		"Version 7"
A61N-001/18			Secondary		"Version 7"

US Classification, Issued: 606041000, 607099000, 607105000, 607113000, 607122000

File Segment: EngPI; EPI;

DWPI Class: S05; P31; P34

Manual Codes (EPI/S-X): S05-B03

27/5/11 (Item 11 from file: 350) [Links](#)

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0006467620 *Drawing available*

WPI Acc no: 1993-272495/199334

XRPX Acc No: N1993-209341

**Laser catheter with movable integral fixation wire for irradiating myocardial tissue - uses fixation wire containing temp sensors to measure distal temp and has tip member supporting optical fibre and fixation wire**

Patent Assignee: ANGEION CORP (ANGE-N); ANGELASE INC (ANGE-N)

Inventor: BRUCKER G G; SAVAGE S D

##### Patent Family ( 2 patents, 19 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1993015676	A1	19930819	WO 1993US1060	A	19930205	199334	B
US 5423805	A	19950613	US 1992831539	A	19920205	199529	E
			US 199332473	A	19930315		

Priority Applications (no., kind, date): US 1992831539 A 19920205; US 199332473 A 19930315

Patent Details					
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 1993015676	A1	EN	20	6	
National Designated States,Original	CA JP				
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE				
US 5423805	A	EN	11	6	Continuation of application US 1992831539

#### Alerting Abstract WO A1

The laser ablation catheter (10) comprises a catheter body, an optical fibre, a fixation wire and a tip member (24). The catheter body is formed from flexible material and has a proximal end and distal end. The optical fibre is located within the catheter body and is coupled to a laser generator at the proximal end. The fixation wire has a proximal end and a distal end slidably attached to the catheter body.

A number of temperature sensors are attached to the distal end of the fixation wire. The tip member has a first passageway which supports the optical fibre and a second passageway in which the fixation wire is slidably aligned. USE/ADVANTAGE - Transfer of laser energy from a laser generator to tissue to be ablated. Monitors damage created by laser radiation. Utilises guiding/fixation wire having temperature monitoring sensors located at the distal tip to maximise use of the cross-sectional area of the catheter body.

**Title Terms /Index Terms/Additional Words:** LASER; CATHETER; MOVE ; INTEGRAL; FIX; WIRE; IRRADIATE; MYOCARDIUM; TISSUE; CONTAIN; TEMPERATURE; SENSE; MEASURE; DISTAL; TIP; MEMBER; SUPPORT; OPTICAL; FIBRE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-0017/00	A	N		R	20060101
A61B-0018/00	A	N		R	20060101
A61B-0018/24	A	I		R	20060101
A61B-0017/00	C	N		R	20060101
A61B-0018/00	C	N		R	20060101
A61B-0018/20	C	I		R	20060101

US Classification, Issued: 606015000, 606007000, 606016000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; V07; P31

Manual Codes (EPI/S-X): S03-B01A; S05-B01; S05-B04; S05-D01E; V07-N

27/5/12 (Item 12 from file: 350) [Links](#)

Derwent WPIX

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0003958278

WPI Acc no: 1987-050140/198707

**Fibre-optic probe for quantifying colorimetric reactions - has colorimetric substance in gap in fibre light path and subjected to measurement substance permeating through covering membrane**

Patent Assignee: OPTEX BIOMED INC (OPTE-N); OPTEX BIOMEDICAL INC (OPTE-N); UNIV TEXAS A & M SYSTEM (TEXA)

Inventor: COSTELLO D; COSTELLO D J

Patent Family ( 9 patents, 16 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1987000920	A	19870212	WO 1986US1579	A	19860731	198707	B
US 4682895	A	19870728	US 1985763019	A	19850806	198732	E
EP 232369	A	19870819	EP 1986905053	A	19860731	198733	E
JP 63500737	W	19880317				198817	E
CN 1986106159	A	19870603				198834	E
EP 232369	B	19891213	EP 1986905053	A	19860731	198950	E
DE 3667541	G	19900118				199004	E
CA 1292665	C	19911203				199204	E
SU 1830141	A3	19930723	WO 1986US1579	A	19860731	199507	E
			SU 4202483	A	19870403		

Priority Applications (no., kind, date): US 1985763019 A 19850806

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1987000920	A	EN	21	3		
National Designated States,Original	JP KR SU					
Regional Designated States,Original	AT BE CH DE FR GB IT LU NL SE					
US 4682895	A	EN	8			
EP 232369	A	EN	10			
Regional Designated States,Original	AT BE CH DE FR GB IT LI LU NL SE					
EP 232369	B	EN				
Regional Designated	AT BE CH DE FR GB IT LI LU NL SE					

States,Original						
CA 1292665	C	EN				
SU 1830141	A3	RU	6	3	PCT Application	WO 1986US1579

#### Alerting Abstract WO A

Encapsulated within a protective sheath (14) of flexible cylindrical Teflon tubing, about 3.5 inches long and 0.024 inches outside diameter, are two optical fibres (18,14) having polymethylmethacrylate cores. The two fibres effectively form a U-shaped light conductor with a gap (23) which forms a sample chamber (22). The optical fibres project beyond the Teflon sleeve with the sample chamber being filled with a colorimetric substance. During use, the substance to be measured enters the sample chamber through the semi-permeable tip covering (26) and permeates the colorimetric substance (25), causing it to change colour and change transmissivity to light passing between a source (10) and a detector (12).

USE/ADVANTAGE - Detection of chemical properties of substances. esp. for 'in vivo' measurement of blood pH levels. Enables insertion directly into living tissue without first being placed in hypodermic needle.

**Title Terms /Index Terms/Additional Words:** FIBRE-OPTIC; PROBE; QUANTIFICATION; COLORIMETRIC; REACT; SUBSTANCE; GAP; FIBRE; LIGHT; PATH; SUBJECT; MEASURE; PERMEATE; THROUGH; COVER; MEMBRANE; BLOOD; PH; LEVEL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G01N-021/17			Main		"Version 7"
A61B-005/00; B23B-009/00; G01J-003/50; G01N-021/59; G01N-021/77			Secondary		"Version 7"

US Classification, Issued: 356402000, 128634000, 128636000, 250227110, 356409000, 356440000, 385012000, 385128000, 422058000, 422082060, 436164000

File Segment: EngPI; EPI;

DWPI Class: S03; S05; V07; P31; P54

Manual Codes (EPI/S-X): S03-E04E; S05-D01X; V07-K01

27/5/13 (Item 13 from file: 350) [Links](#)

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0003591380

WPI Acc no: 1986-027659/

**Electrolytic transducer system for measuring pressure - has flexible hollow tube with three spaced electrodes**

**and partly filled with saline solution to produce bridge circuit**

Patent Assignee: US SEC OF ARMY (USSA)

Inventor: BRYANT G H

Patent Family ( 2 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 4561450	A	19851231	US 1984657438	A	19841003	198604	B
US N6657438	N	19851217	US 1984657438	A	19841003	198614	E

Priority Applications (no., kind, date): US 1984657438 A 19841003

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 4561450	A	EN	6	4	

**Alerting Abstract US A**

The appts. comprises a flexible tube having an open end a closed end, a hollow interior and an outer surface. An electrode within the tube near the closed end, and another electrode is spaced from it towards the open tube end. A centrally dispds electrode within the tube is between the first two electrodes.

A pair of series connected electrical resistors are coupled to the electrode and the spaced electrode to form a Wheatstone bridge. A tub portion is softer and more readily compressed than the flexible tube joins all of the electrodes to the flexible tube and forms a portion of the flexible tube.

USE - For twenty four hour gastro intestinal studies with relatively mobile patients.

**Title Terms /Index Terms/Additional Words:** ELECTROLYTIC; TRANSDUCER; SYSTEM; MEASURE; PRESSURE; FLEXIBLE; HOLLOW; TUBE; THREE; SPACE ; ELECTRODE; FILLED; SALINE; SOLUTION; PRODUCE; BRIDGE; CIRCUIT; DISTAL; OESOPHAGUS; SPHINCTER

**Class Codes**

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; G01L-000/01			Secondary		"Version 7"

US Classification, Issued: 128780000

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01C5

27/5/14 (Item 14 from file: 350) [Links](#)

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0002832546

WPI Acc no: 1983-D5330K/

**Fibre optic pH probe for tissue measurements - has needle containing colour changing dye in ion permeable tube and system for determining colour change**

Patent Assignee: US SEC OF COMMERCE (USDC)

Inventor: CHEN V T; GOLDSTEIN S R; MARKLE D R

Patent Family ( 1 patents, 4 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 73558	A	19830309	EP 1982303162	A	19820617	198311	B

Priority Applications (no., kind, date): US 1981296239 A 19810825

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
EP 73558	A	EN	13	4	
Regional Designated States,Original		DE FR GB NL			

#### Alerting Abstract EP A

The probe for insertion into tissue and includes a rigid hollow needle (12) having a sharp-forward end (14) and an ion-permeable membrane in the form of an ion-permeable tube (18) mounted in the needle. The needle has at least one aperture (15) exposing the tube. A pH sensitive, colour-changing, dye-containing material (19) is mounted in the tube in the region of the aperture and the forward portion of the tube adjacent this material is sealed.

A pair of optical fibres (17,20) are mounted in the tube rearwardly of and contiguous to the material (19) for respectively delivering light from an external source to the material and returning light from the material to an external sensor for **measuring colour** change of the material. This probe causes the min. damage or trauma to the tissue of interest. generates min. signal artefact, and provides improved output signal strength.

**Title Terms /Index Terms/Additional Words:** FIBRE; OPTICAL; PH; PROBE; TISSUE; MEASURE; NEEDLE; CONTAIN; COLOUR; CHANGE; DYE; ION; PERMEABLE; TUBE; SYSTEM; DETERMINE

#### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Secondary		"Version 7"

File Segment: EngPI; EPI;

DWPI Class: S03; S05; P31

Manual Codes (EPI/S-X): S03-E04E; S05-C09; S05-D09

27/5/15 (Item 15 from file: 350) [Links](#)

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0002099285

WPI Acc no: 1980-02161C/

**Intravascular catheter - with several distributed resistance measuring pressure pick-ups facing openings in catheter wall**

Patent Assignee: SIEMENS AG (SIEI)

Inventor: HOEK B; LINDSTROEM K; ULMSTEN U

Patent Family ( 4 patents, 4 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 6577	A	19800109	EP 1979102045	A	19790620	198002	B
DE 2828206	A	19800110	DE 2828206	A	19780627	198003	E
EP 6577	B	19811125	EP 1979102045	A	19790620	198149	E
DE 2828206	C	19860911	DE 2828206	A	19780627	198637	E

Priority Applications (no., kind, date): EP 1979102045 A 19790620; DE 2828206 A 19780627

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
EP 6577	A	EN			
Regional Designated States,Original	DE FR GB NL SE				
EP 6577	B	DE			
Regional Designated States,Original	FR GB NL SE				

#### Alerting Abstract EP A

A catheter for the intravascular insertion in a patient, e.g. to measure the pressure before and after a heart valve or at two points in the oesophagus, uterus or urinary tract simultaneously, is a flexible hose which contains two pressure pickups at a certain distance from each other. Each pickup consists of a test cell, with its open end facing an opening in the catheter wall, which houses two electrodes to measure the resistance of the liquid column formed in it. This saves the intravascular movement of a catheter and provides more accurate results at more than one spot simultaneously. The catheter is extremely compact and allows more pickups to be added in a small space.

**Title Terms /Index Terms/Additional Words:** INTRAVASCULAR; CATHETER; DISTRIBUTE; RESISTANCE; MEASURE; PRESSURE; PICK-UP; FACE; OPEN; WALL



## Class Codes

### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"
A61B-005/02; A61M-025/00; G01L-009/00			Secondary		"Version 7"

File Segment: CPI; EngPI; EPI

DWPI Class: B07; S02; P31; P34

Manual Codes (CPI/A-N): B11-C04B; B12-K04

27/5/16 (Item 16 from file: 350) [Links](#)

Derwent WPIX

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0000793258

WPI Acc no: 1974-L2311V/

**Electrochemical sensor for oxygen partial pressure - in miniature polyethylene tube for in vivo use**

Patent Assignee: HOFFMANN-LA ROCHE & CO (HOFF)

Inventor: FEHLMANN W; MINDT W

### Patent Family ( 11 patents, 10 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
NL 197404762	A	19741112				197448	B
DE 2414839	A	19741128	DE 2414839	A	19740327	197449	E
SE 197406226	A	19741209				197501	E
DK 197402579	A	19741223				197503	E
FR 2229065	A	19750110				197509	E
CH 564771	A	19750731				197534	E
US 3905888	A	19750916	US 1974465191	A	19740429	197539	E
DD 114685	A	19750812				197540	E
CA 999928	A	19761116				197649	E
GB 1469835	A	19770406				197714	E
DE 2414839	B	19780316				197812	E

Priority Applications (no., kind, date): CH 19736642 A 19730510

### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes

SE 197406226	A	SV				
CH 564771	A	DE				
CA 999928	A	EN				

**Title Terms /Index Terms/Additional Words:** ELECTROCHEMICAL; SENSE; OXYGEN; PRESSURE; MINIATURE; POLYETHYLENE; TUBE; VIVO

**Class Codes**

**International Patent Classification**

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; G01N-027/40; G01N-033/16			Secondary		"Version 7"

US Classification, Issued: 204415000, 128635000

File Segment: EngPI; EPI;  
DWPI Class: S03; S05; P31

33/5/1 (Item 1 from file: 350) [Links](#)

Derwent WPIX

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0013682416 *Drawing available*

WPI Acc no: 2003-779118/200373

XRAM Acc no: C2003-214549

XRPX Acc No: N2003-624359

**Bioreactor for conditioning intravascular tissue engineered medical products, comprises bioreactor chamber, circulation mechanism, and microprocessor controller**

Patent Assignee: NICKEL T (NICK-I); ST3 DEV CORP (STTH-N); VILENDRER K (VILE-I)

Inventor: NICKEL T; VILENDRER K

Patent Family ( 4 patents, 101 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2003078564	A2	20030925	WO 2003US8197	A	20030317	200373	B
US 20030199083	A1	20031023	US 2002364500	P	20020315	200377	E
			US 2002429583	P	20021127		
			US 2003371175	A	20030219		
AU 2003225840	A1	20030929	AU 2003225840	A	20030317	200432	E
AU 2003225840	A8	20051020	AU 2003225840	A	20030317	200615	E

Priority Applications (no., kind, date): US 2002429583 P 20021127; US 2002364500 P 20020315; US 2003371175 A 20030219

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2003078564	A2	EN	59	15		
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW					
Regional Designated States,Original	AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
US 20030199083	A1	EN			Related to Provisional	US 2002364500
					Related to Provisional	US 2002429583
AU 2003225840	A1	EN			Based on OPI patent	WO 2003078564
AU 2003225840	A8	EN			Based on OPI patent	WO 2003078564

Alerting Abstract WO A2

**NOVELTY** - Bioreactor comprises bioreactor chamber, circulation mechanism, and microprocessor controller. The chamber includes clamp(s) for holding the tissue. The circulation mechanism provides fluid nutrient flow across tissue surface. The microprocessor controller measures fluid flow in chamber, and measures response of tissue. The microprocessor controller provides real time monitoring and control of conditions for the tissue in the chamber.

**USE** - For conditioning intravascular tissue engineered medical products used in heart valve replacement, cardiovascular bypass surgery, venous valve repair and other intravascular surgeries.

**ADVANTAGE** - The invention provides economical configuration. It provides alternative to the traditional man-made medical devices.

**DESCRIPTION OF DRAWINGS** - The figure shows a microprocessor controlled bioreactor.

1-6 Metals

7 Glass

100 Servo controlled bioreactor

102 Chamber assembly

108, 110, 112 Flow pump

114, 116, 118, 120 Transducers

122-1, 122-2 Soft clamp

130 Access port

131 Inspection equipment

132, 134, 136 Pressure sensor

140 Sensor

**Title Terms /Index Terms/Additional Words:** CONDITION; INTRAVASCULAR; TISSUE; ENGINEERING; MEDICAL; PRODUCT; COMPRISE; CHAMBER; CIRCULATE; MECHANISM; MICROPROCESSOR; CONTROL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
C12M; C12M-001/12; C12M-003/04			Main		"Version 7"

US Classification, Issued: 435297200

File Segment: CPI; EPI

DWPI Class: B04; D16; D22; S03; S05; T01; V06; X25

Manual Codes (EPI/S-X): S03-E14H6; S03-E15; S05-C03; S05-X; T01-J06A; V06-N26; V06-U10; X25-L03A

Manual Codes (CPI/A-N): B04-F02; B11-C04A; B11-C09; D05-H02; D05-H08; D09-C01C

33/5/2 (Item 2 from file: 350) [Links](#)

Derwent WPIX

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0013523675 *Drawing available*

WPI Acc no: 2003-616804/200358

XRPX Acc No: N2003-491211

**Photonic pacemaker-cardiac monitor apparatus for magnetic resonance imaging process, has photonic pacemaker to pace heart through photonic catheter and warning system with display mounted on non-implantable housing**

Patent Assignee: GREATBATCH W (GREA-I)

Inventor: GREATBATCH W

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20030109901	A1	20030612	US 200114890	A	20011211	200358	B

Priority Applications (no., kind, date): US 200114890 A 20011211

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 20030109901	A1	EN	8	3	

#### Alerting Abstract US A1

**NOVELTY** - The apparatus has a photonic pacemaker adapted to pace a heart and photonic electrocardiography monitor adapted to sense cardiac blood oxygen through photonic catheter (10). A system warns if any failure occurs in the apparatus and has a display mounted on a non-implantable control housing of the apparatus.

**DESCRIPTION** - An INDEPENDENT CLAIM is also included for a method for pacing and monitoring a patient undergoing a Magnetic Resonance Imaging (MRI) procedure.

**USE** - Used for cardiac monitoring during MRI diagnostic procedures.

**ADVANTAGE** - The apparatus provides real-time information concerning cardiac activity thereby allowing the practitioner to take immediate responsive action. The apparatus warns if patient fails to receive proper pacemaker stimulation and exhibits proper cardiac electrical and mechanical activity.

**DESCRIPTION OF DRAWINGS** - The drawing shows a block diagrammatic view of a photonic pacemaker-cardiac monitor.

2 Photonic pacemaker cardiac monitor apparatus

10 Photonic catheter

16 Distal housing.

**Title Terms /Index Terms/Additional Words:** PHOTON; PACEMAKER; CARDIAC; MONITOR; APPARATUS; MAGNETIC; RESONANCE; IMAGE; PROCESS; PACE; HEART; THROUGH; CATHETER; WARNING; SYSTEM; DISPLAY; MOUNT; NON; IMPLANT; HOUSING

#### Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61N-001/362			Main		"Version 7"

US Classification, Issued: 607009000

File Segment: EngPI; EPI;

DWPI Class: S05; P34

Manual Codes (EPI/S-X): S05-A01A1; S05-D01G

33/5/3 (Item 3 from file: 350) Links

Derwent WPIX

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0008543913

WPI Acc no: 1998-076824/199807

XRAM Acc no: C1998-025661

XRPX Acc No: N1998-061434

**Automated aquaculture system with culture tanks connected to filters - has ultraviolet or ozone sources for purification, automated biofilters which monitor water quality and video camera for monitoring animals**

Patent Assignee: UNIV TEXAS SYSTEM (TEXA)

Inventor: LEE P G; TURK P E; WHITSELL A; WHITSON J L

Patent Family ( 8 patents, 77 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1997049279	A1	19971231	WO 1997US10895	A	19970624	199807	B
AU 199734991	A	19980114	AU 199734991	A	19970624	199822	E
NO 199806113	A	19990224	WO 1997US10895	A	19970624	199918	E
			NO 19986113	A	19981223		
EP 921722	A1	19990616	EP 1997931338	A	19970624	199928	E
			WO 1997US10895	A	19970624		
US 5961831	A	19991005	US 199622176	P	19960624	199948	E
			US 1997881718	A	19970624		
CN 1228008	A	19990908	CN 1997197260	A	19970624	199954	E
JP 2000513224	W	20001010	WO 1997US10895	A	19970624	200053	E
			JP 1998503442	A	19970624		
US 6171480	B1	20010109	US 199622176	P	19960624	200104	E
			US 1997881718	A	19970624		
			US 1999337490	A	19990621		

Priority Applications (no., kind, date): US 1999337490 A 19990621; US 1997881718 A 19970624; US 199622176 P 19960624

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
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WO 1997049279	A1	EN	57	17		
National Designated States,Original	AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
Regional Designated States,Original	AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
AU 199734991	A	EN			Based on OPI patent	WO 1997049279
NO 199806113	A	NO			PCT Application	WO 1997US10895
EP 921722	A1	EN			PCT Application	WO 1997US10895
					Based on OPI patent	WO 1997049279
Regional Designated States,Original	AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
US 5961831	A	EN			Related to Provisional	US 199622176
JP 2000513224	W	JA	57		PCT Application	WO 1997US10895
					Based on OPI patent	WO 1997049279
US 6171480	B1	EN			Related to Provisional	US 199622176
					Division of application	US 1997881718
					Division of patent	US 5961831

#### Alerting Abstract WO A1

Automated aquaculture system with a closed, recirculating water system, comprises:(i)  $\geq 1$  tank (10); (ii) a prefilter system (22) comprising a particulate filter (20), a foam fractionator (30) and a carbon filter (40), connected to the tank(s); (iii) an aerobic biofilter (70) connected to the prefilter system; (iv) a pump (50) which moves the effluent from the culture tanks through the recirculating system; (v)  $\geq 1$  ultraviolet light sources (80) connected to the system for irradiating the water before it is returned to the culture tank(s); (vi) an anaerobic biofilter (60) connected to the recirculating system, and (vii)  $\geq 1$  that receive information from the system and control the system operation in response to the information. Also claimed are: (1) a computer automated upflow bead filter system, and (2) a process for culturing an aquatic species.

**ADVANTAGE** - The system which incorporates a machine vision subsystem allowing animal data to be incorporated into control parameters is automated and closed, so that there is no need to change and dispose of large volumes of water.

**Title Terms /Index Terms/Additional Words:** AUTOMATIC; AQUACULTURE; SYSTEM; CULTURE; TANK; CONNECT; FILTER; ULTRAVIOLET; OZONE; SOURCE; PURIFICATION; MONITOR; WATER; QUALITY; VIDEO; CAMERA; ANIMAL

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A01K; A01K-063/04; B01D-017/12			Main		"Version 7"

A01K-061/00; C02F-001/32; C02F-003/00; C02F-003/30; G06F-015/18			Secondary		"Version 7"
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US Classification, Issued: 210614000, 119204000, 119227000, 119260000, 210085000, 210094000, 210096100, 210169000, 210218000, 210631000, 210739000, 210806000, 210085000, 210090000, 210096100, 210143000, 210150000, 210275000, 210614000, 210617000

File Segment: CPI; EngPI; EPI

DWPI Class: D15; X25; P14

Manual Codes (EPI/S-X): X25-H03; X25-N02

Manual Codes (CPI/A-N): D04-A01E; D04-A01F; D04-A01K; D04-A01P

33/5/4 (Item 4 from file: 350) [Links](#)

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0007364782

WPI Acc no: 1995-177629/199523

XRAM Acc no: C1995-082279

XRPX Acc No: N1995-139464

**Flow through pressure sensor partic for kidney dialysis procedures - has pressure sensor sandwiched between two seals and clamped between housing on side of conduit and in fluid communication with it**

Patent Assignee: HONEYWELL INC (HONE)

Inventor: COOK J D

Patent Family ( 1 patents, 1 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 5410916	A	19950502	US 1994265472	A	19940624	199523	B

Priority Applications (no., kind, date): US 1994265472 A 19940624

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
US 5410916	A	EN	10	4	

**Alerting Abstract US A**

A pressure sensor has a connecting second conduit (20) passing through a boss (14) on the wall of a first conduit (10) and a housing (30) clamped to the boss so that a pressure sensing element (60) carried on the housing communicates with the first conduit. The element is sandwiched between two seals (50, 70) which are compressed by the clamping of the housing. Electrical leads (40) from the element pass out through the housing. An electrically



insulating coating is applied to the element between it and the seal adjacent the housing.

USE - Flowthrough pressure sensor for measuring bodily fluids, partic. for use in kidney dialysis procedures.

ADVANTAGE - Transducer avoids crevices and small spaces where bacteria laden material can accumulate and is mfd. using materials approved by US Federal Food and Drug Administration.

**Title Terms /Index Terms/Additional Words:** FLOW; THROUGH; PRESSURE; SENSE; KIDNEY; DIALYSE; PROCEDURE; SANDWICH; TWO; SEAL; CLAMP; HOUSING; SIDE; CONDUIT; FLUID; COMMUNICATE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G01L-0019/00	A	I		R	20060101
G01L-0009/00	A	I		R	20060101
G01L-0019/00	C	I		R	20060101
G01L-0009/00	C	I		R	20060101

US Classification, Issued: 073706000, 073756000, 073431000, 128748000

File Segment: CPI; EPI

DWPI Class: A96; B07; S02; S05

Manual Codes (EPI/S-X): S02-F04B1; S05-D01B1; S05-D01X

Manual Codes (CPI/A-N): A12-V02; A12-V03D; B11-C08; B12-K04A

33/5/5 (Item 5 from file: 350) [Links](#)

Derwent WPIX

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0007074652 *Drawing available*

WPI Acc no: 1995-098521/199513

Related WPI Acc No: 2004-675662

XRPX Acc No: N1995-077819

**Temperature-based blood flow determining method used in living body - using differential temperature measurements before and after known change of thermal energy level, at site in blood flow path**

Patent Assignee: BOWMAN H F (BOWM-I); THERMAL TECHNOLOGIES INC (THER-N)

Inventor: BOWMAN H F

##### Patent Family ( 15 patents, 18 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1995005115	A2	19950223	WO 1994US9064	A	19940811	199513	B
WO 1995005115	A3	19950413	WO 1994US9064	A	19940811	199614	E
EP 712290	A1	19960522	EP 1994925821	A	19940811	199625	E

			WO 1994US9064	A	19940811		
CA 2144600	A	19960915	CA 2144600	A	19950314	199703	NCE
JP 9501591	W	19970218	WO 1994US9064	A	19940811	199717	E
			JP 1995507066	A	19940811		
US 5692514	A	19971202	US 1993106068	A	19930813	199803	E
			US 1995449205	A	19950524		
US 5797398	A	19980825	US 1993106068	A	19930813	199841	E
US 6165132	A	20001226	US 1993106068	A	19930813	200103	E
			US 1997946367	A	19971007		
US 6203501	B1	20010320	US 1993106068	A	19930813	200118	E
			US 1997946366	A	19971007		
US 20010000792	A1	20010503	US 1993106068	A	19930813	200126	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
US 6565516	B2	20030520	US 1993106068	A	19930813	200336	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
US 20030120162	A1	20030626	US 1993106068	A	19930813	200343	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
			US 2003364773	A	20030211		
JP 2004195251	A	20040715	JP 1995507066	A	19940811	200446	E
			JP 200465117	A	20040309		
JP 3557211	B2	20040825	WO 1994US9064	A	19940811	200456	E
			JP 1995507066	A	19940811		
US 6913576	B2	20050705	US 1993106068	A	19930813	200544	E
			US 1997946366	A	19971007		
			US 2000733595	A	20001208		
			US 2003364773	A	20030211		

Priority Applications (no., kind, date): US 2003364773 A 20030211; US 2000733595 A 20001208; US 1997946367 A 19971007; US 1997946366 A 19971007; US 1995449205 A 19950524; CA 2144600 A 19950314; US 1993106068 A 19930813

#### Patent Details

Patent Number	Kind	Lang	Pgs	Draw	Filing Notes	
WO 1995005115	A2	EN	47	10		
National Designated States, Original	CA JP					
Regional Designated States, Original	AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
WO 1995005115	A3	EN				

EP 712290	A1	EN	47	10	PCT Application	WO 1994US9064
					Based on OPI patent	WO 1995005115
Regional Designated States, Original	DE FR GB					
CA 2144600	A	EN				
JP 9501591	W	JA	35		PCT Application	WO 1994US9064
					Based on OPI patent	WO 1995005115
US 5692514	A	EN	16	10	Division of application	US 1993106068
US 6165132	A	EN			Division of application	US 1993106068
					Division of patent	US 5797398
US 6203501	B1	EN			Division of application	US 1993106068
US 20010000792	A1	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Division of patent	US 5797398
					Division of patent	US 6203501
US 6565516	B2	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Division of patent	US 5797398
					Division of patent	US 6203501
US 20030120162	A1	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Continuation of application	US 2000733595
					Division of patent	US 5797398
					Division of patent	US 6203501
JP 2004195251	A	JA	20		Division of application	JP 1995507066
JP 3557211	B2	JA	14		PCT Application	WO 1994US9064
					Previously issued patent	JP 09501591
					Based on OPI patent	WO 1995005115
US 6913576	B2	EN			Division of application	US 1993106068
					Division of application	US 1997946366
					Continuation of application	US 2000733595
					Division of patent	US 5797398
					Division of patent	US 6203501
					Continuation of patent	US 6565516

#### Alerting Abstract WO A2

The method involves changing the thermal energy level by a predetermined amount at a site in a blood flow path. Temperatures at an upstream and a downstream location are detected. The temperature difference at one energy level is determined initially.

The energy level is changed and the resulting temperature difference determined. The blood flow is calculated as a function of the known energy level change and the two temperature differences. The first location is thermally isolated from the thermal energy changes occurring at the site. The blood flow path includes part of the heart and the

blood flow represents cardiac output.

**ADVANTAGE** - Uses differential measurement technique to eliminate effect of thermal fluctuations, permitting use of minimal thermal input and allowing frequent or continuous measurements to be performed.

**Title Terms /Index Terms/Additional Words:** TEMPERATURE; BASED; BLOOD; FLOW; DETERMINE; METHOD; LIVE; BODY; DIFFERENTIAL; MEASURE; AFTER; CHANGE; THERMAL; ENERGY; LEVEL; SITE; PATH

**Class Codes**

**International Patent Classification**

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00; A61B-005/02; A61B-005/026; A61B-005/028			Main		"Version 7"
G01F-001/68; G01F-001/684; G01F-001/69; G01K-007/22; G01K-007/24			Secondary		"Version 7"

US Classification, Issued: 600505000, 600505000, 128691000, 128692000, 128713000, 128692000, 128713000, 128736000, 600505000, 600526000, 600505000, 600526000, 600505000, 600526000, 600505000, 600526000

File Segment: EngPI; EPI;

DWPI Class: S02; S05; P31

Manual Codes (EPI/S-X): S02-C01B7; S05-D01B1; S05-D01E

33/5/6 (Item 6 from file: 350) [Links](#)

Derwent WPIX

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0006323245 *Drawing available*

WPI Acc no: 1993-119057/

Related WPI Acc No: 1988-214366; 1991-294514; 1990-046404; 1990-046420; 1992-116101; 1994-272777; 1996-029128

XRPX Acc No: N1993-090827

**Intravascular blood parameter measurement system - senses parameter of blood in-vivo using catheter with lumen extending through catheter and having proximal and distal ends with distal opening at distal end and probe having sensors at distal end**

Patent Assignee: MINNESOTA MINING & MFG CO (MINN)

Inventor: MAXWELL T P

**Patent Family ( 3 patents, 4 countries )**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 536808	A1	19930414	EP 1992118809	A	19880126	199315	B
EP 536808	B1	19970709	EP 1991121782	A	19880126	199732	E

			EP 1992118809	A	19880126		
DE 3855960	G	19970814	DE 3855960	A	19880126	199738	E
			EP 1992118809	A	19880126		

Priority Applications (no., kind, date): US 19878937 A 19870130

Patent Details							
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes		
EP 536808	A1	EN	11	10	Related to patent	EP 479341	
Regional Designated States,Original	AT DE FR GB						
EP 536808	B1	EN	12	7	Division of application	EP 1991121782	
Regional Designated States,Original	AT DE FR GB						
DE 3855960	G	DE			Application	EP 1992118809	
					Based on OPI patent	EP 536808	

#### Alerting Abstract EP A1

The in-vivo measurement assembly includes a fluorescent oxygen sensor (69) for sensing the concentration of oxygen in blood and providing a fluorescent oxygen signal. An elongated optical transmission signal unit (75) is optically coupled to the sensor (69) for transmitting the oxygen signal. The sensor is carried by a distal portion of the transmission unit (75).

The sensor and the transmission unit is sized and received within a blood vessel of a patient, and is kept from contacting the wall of the vessel when the sensor is within the vessel to reduce the wall effect on the oxygen signal. The keeping unit (53) spacing the sensor from the wall of the vessel allows blood to flow between the sensor and the wall of the vessel.

ADVANTAGE - The sensors provide signals related to blood parameters, and uses or processes them continuously, intermittently or on demand to provide reading indicative of the blood parameters.

**Title Terms /Index Terms/Additional Words:** INTRAVASCULAR; BLOOD; PARAMETER; MEASURE; SYSTEM; SENSE; VIVO; CATHETER; LUMEN; EXTEND; THROUGH; PROXIMITY; DISTAL; END; OPEN; PROBE

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/00			Main		"Version 7"

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01G

33/5/7 (Item 7 from file: 350) Links

Derwent WPIX

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0005951721 *Drawing available*

WPI Acc no: 1992-183445/199222

XRPX Acc.No: N1992-138455

**Urethral inserted applicator for prostate hyperthermia - is connected to balloon type catheter to provide uniform tissue heating field along length of applicator**

Patent Assignee: BSD MEDICAL CORP (BSDM-N)

Inventor: SCHAEFER-MEYER T N; SCHAEFERMEYER T N; TUMEH A M; TURNER P F

Patent Family ( 6 patents, 48 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1992007621	A1	19920514	WO 1991US8182	A	19911104	199222	B
AU 199190271	A	19920526	AU 199190271	A	19911104	199235	E
			WO 1991US8182	A	19911104		
EP 556284	A1	19930825	WO 1991US8182	A	19911104	199334	E
			EP 1992900026	A	19911104		
US 5249585	A	19931005	US 1988225307	A	19880728	199341	E
			US 1990609373	A	19901105		
JP 6501410	W	19940217	WO 1991US8182	A	19911104	199412	E
			JP 1992500922	A	19911104		
EP 556284	A4	19940112	WO 1991US7878	A	19911025	199528	E

Priority Applications (no., kind, date): US 1988225307 A 19880728; US 1990609373 A 19901105

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1992007621	A1	EN	23	16		
National Designated States,Original	AU BB BG BR CA CS FI HU JP KP KR LK MC MG MN MW NO PL RO SD SU					
Regional Designated States,Original	AT BE BF BJ CF CG CH CI CM DE DK ES FR GA GB GN GR IT LU ML MR NL SE SN TD TG					
AU 199190271	A	EN			PCT Application	WO 1991US8182
					Based on OPI patent	WO 1992007621
EP 556284	A1	EN	2	1	PCT Application	WO 1991US8182
					Based on OPI patent	WO 1992007621
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
US 5249585	A	EN	18	18	C-I-P of application	US 1988225307

				C-I-P-of patent	US 4967765
JP 6501410	W	JA		PCT Application	WO 1991US8182
				Based on OPI patent	WO 1992007621
EP 556284	A4	EN			

#### Alerting Abstract WO A1

The radio frequency energy source (12) supplies electromagnetic energy to the applicator (14) which acts as a first electrode and thereby elevates the temp. of the surrounding tissue. A control circuit (26) contains a comparator connected to a temp. sensor, mounted adjacent to the applicator, and a temp. reference device. The tissue temp. is maintained at a desired value by provision of control signals to the energy source.

A sheet (or sheath) of insulating material covers the applicator to insulate it from the tissue. The sheet thickness may be varied to provide uniform tissue heating along the length of the applicator. An inflatable balloon (76) attached at the end of the catheter-mounted coil applicator ensures that the correct position is maintained during the procedure.

USE/ADVANTAGE - For treatment of benign prostatic hyperplasia. High-flexibility, sterilisation, disposability. Additionally provides automatic positioning during use.

**Title Terms /Index Terms/Additional Words:** URETHRA; INSERT; APPLY; PROSTATE; HYPERTHERMIA; CONNECT; BALLOON; TYPE; CATHETER; UNIFORM; TISSUE; HEAT; FIELD; LENGTH

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61N-005/02; A61N-005/04			Main		"Version 7"

US Classification, Issued: 607099000, 128736000, 607113000, 607116000, 607156000

File Segment: EngPI; EPI;

DWPI Class: S05; P34

Manual Codes (EPI/S-X): S05-A03; S05-A09

33/5/8 (Item 8 from file: 350) [Links](#)

Derwent WPIX

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0004570369 *Drawing available*

WPI Acc no: 1988-322625/198845

**Catheter for heart valve stenosis therapy - with pigtail inlet for coolant solution, balloon and thermistor**

Patent Assignee: ALT E (ALTE-I)

Inventor: ALT E

Patent Family ( 5 patents, 12 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1988008274	A	19881103	WO 1988DE240	A	19880421	198845	B
DE 3714027	A	19881110	DE 3714027	A	19870427	198846	E
DE 3714027	C	19890406	DE 3714027	A	19870427	198914	E
EP 313595	A	19890503	EP 1988903184	A	19880421	198918	E
US 5009234	A	19910423	US 1988301760	A	19881222	199120	E

Priority Applications (no., kind, date): DE 3714027 A 19870427

#### Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 1988008274	A	DE	26	6	
National Designated States, Original	JP				
Regional Designated States, Original	AT BE CH DE FR GB IT LU NL SE				
DE 3714027	A	DE	8		
EP 313595	A	DE			
Regional Designated States, Original	DE FR GB IT				

#### Alerting Abstract WO A

A catheter (1) for insertion e.g. into the sorts to cure any stenosis of the cardiac valve has a distal curved pigtail end (PT) with openings (6) for the injection of a coolant solution and a temperature sensor (8). An inflatable balloon (7) is arranged between the two for dilatation purposes.

The flexible hose (2) has three hollow channels, one of them communicates with the openings (6), and a second with the balloon; these two channels terminate in hoses (11,12) with connectors (13,14). The third channel leading to the opening (21) has a hose (22) and connector (23). The temperature sensor or thermistor has leads terminating in the hose (15) and connector (16).

ADVANTAGE - This permits also a measurement of the pumping characteristics of the heart (time-volume function) before any stenosis dilatation is undertaken.

**Title Terms /Index Terms/Additional Words:** CATHETER; HEART; VALVE; STENOSIS; THERAPEUTIC; INLET; COOLANT; SOLUTION; BALLOON; THERMISTOR

#### Class Codes

##### International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/02			Main		"Version 7"
A61M-025/00; A61M-029/02; A61M-005/14			Secondary		"Version 7"

US Classification, Issued: 128672000, 128692000, 128736000



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File Segment: EngPI; ;  
DWPI Class: P31; P34

13/5/1 (Item 1 from file: 5) [Links](#)

Fulltext available through: [SCIENCEDIRECT](#)

Biosis Previews(R)

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0015830241 **Biosis No.:** 200600175636

**Method and apparatus for monitoring left ventricular work or power**

**Author:** Salo Rodney

**Author Address:** Fridley, MN USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents MAY 10 2005 2005

**Patent Number:** US 06892095 **Patent Date Granted:** May 10, 2005 20050510 **Patent Classification:** 607-21

**Patent Assignee:** Cardiac Pacemakers, Inc. **Patent Country:** USA

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** A body implantable system employs a lead system having at least one electrode and **at least one thermal sensor** at a distal end. The lead system is implanted **within** a patient's **heart** in a coronary vein of the left ventricle. The **thermal sensor** can be attached to a **catheter** that is disposed within an open lumen of the lead system. The thermal sensor senses a coronary vein temperature. The coronary vein **temperature** can be **measured** at a detector/energy delivery system and used as an activity indicator to adaptively control pacing rate. The **measured** coronary vein **temperature** can be also used with a left ventricular flow measurement to determine hemodynamic efficiency of the heart. A detected change in hemodynamic efficiency can be used by the detector/energy delivery system to modify the delivery of electrical pulses to the lead system.

**Descriptors:**

**Major Concepts:** Cardiovascular Medicine--Human Medicine, Medical Sciences; Equipment Apparatus Devices and Instrumentation

**Methods & Equipment:** apparatus for monitoring left ventricular work--medical equipment

**Concept Codes:**

14506 Cardiovascular system - Heart pathology

13/5/2 (Item 1 from file: 144) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#) [SCIENCEDIRECT](#)

Pascal

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13530067 PASCAL No.: 98-0230141

Comparison **between** continuous brain tissue pO<sub>2</sub> SUB 2 , pCO<sub>2</sub> SUB 2 , pH, and **temperature** and simultaneous cerebrovenous **measurement** using a multisensor probe in a porcine intracranial pressure model

MENZEL M; RIEGER A; ROTH S; SOUKUP J; FURKA I; MIKO I; MOLNAR

P; PEUSE C; HENNIG C; RADKE J

Anaesthesiology, University of Halle, Germany; Neurosurgery University of Halle, Germany; Experimental Surgery, University of Debrecen, Hungary; Institute of Neuropathology, University of Debrecen, Hungary; Biomedical Sensors LTD, Germany

Journal: Journal of neurotrauma, 1998  
, 15 (4) 265-276

ISSN: 0897-7151 CODEN: JNEUE4 Availability: INIST-20611  
; 354000075251660040

No. of Refs.: 1 p.1/2

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English

Local brain tissue oxygenation (p SUB t SUB i O SUB 2 ) and global cerebrovenous hemoglobin saturation (SjO SUB 2 ) are increasingly used to continuously monitor patients after severe head injury (SHI). In patients, simultaneous local and global oxygen measurements of these types have shown different results regarding the comparability of the findings during changes in CPP and ICP. This is in contrast to theoretical expectations. The aim of this study was to compare p SUB t SUB i O SUB 2 measurement with cerebrovenous oxygen partial pressure measurement (p SUB c SUB v O SUB 2 ) in an animal intracranial pressure model. To this end, a multisensor probe was placed in the left frontoparietal white matter to measure p SUB t SUB i O SUB 2 , pCO SUB 2 (p SUB t ;CO SUB 2 ), pH (pH SUB t ;), and temperature (t SUB t SUB i ) while simultaneously measuring these same parameters (p SUB c SUB v O SUB 2 , p SUB c SUB v CO SUB 2 , pH SUB C SUB v , t SUB c SUB v ) in the sagittal sinus of 9 pigs under general anesthesia. By stepwise inflating a balloon catheter, placed in supracerebellar infratentorial compartment, ICP was increased and CPP was decreased. The baseline levels of p SUB t jO SUB 2 , P SUB t ;CO SUB 2 , and pH SUB t SUB i \* in the noninjured brain tissue showed more heterogeneity compared to the findings in cerebrovenous blood. Both, p SUB t SUB i O SUB 2 and p SUB C SUB v O SUB 2 were significantly correlated to the induced CPP decrease. PCO SUB 2 was inversely correlated to the course of CPP in both measurement compartments. Temperature measurement showed a positive correlation with CPP in both compartments. These findings demonstrate that brain tissue oximetry and cerebrovenous pO SUB 2 measurement are sensitive to CPP changes. The newly available continuous parameters in multisensor probes could be helpful in interpreting findings of cerebral oxygen measurement in man by analyzing the interrelationship of these parameters.

English Descriptors: Intracranial hypertension; Tube (catheterization); Measurement sensor; Multiple; Oxygenation; Tissue; Oxygen pressure; Saturation; Hemoglobin; Temperature measurement; Perfusion; Venous blood; Technique; Monitoring; Surveillance; Comparative study; Pig; Animal

Broad Descriptors: Artiodactyla; Ungulata; Mammalia; Vertebrata; Nervous system diseases; Central nervous system disease; Cerebral disorder; Metabolism; Hemodynamics; Artiodactyla; Ungulata; Mammalia; Vertebrata; Systeme nerveux pathologie; Systeme nerveux central pathologie; Encephale

pathologie; Metabolisme; Hemodynamique; Artiodactyla; Ungulata; Mammalia; Vertebrata; Sistema nervioso patologia; Sistema nervosio central patologia; Encefalo patologia; Metabolismo; Hemodinamica

French Descriptors: Hypertension intracranienne; Sonde(catheterisme); Capteur mesure; Multiple; Oxygenation; Tissu; Pression oxygene; Saturation; Hemoglobine; Mesure temperature; Perfusion; Sang veineux; Technique; Monitoring; Surveillance; Etude comparative; Porc; Animal

Classification Codes: 002B27B14A

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16/7/1

02983016/7 Links

EMBASE

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02983016 EMBASE No: 1985026977

**A new glucose electrode for tissue measurements**

Kessler M.; Hoper J.; Volkholz H.J.; et al.

Institut für Physiologie und Kardiologie der Universität Erlangen-Nürnberg, D-8520 Erlangen Germany

Hepato-Gastroenterology ( HEPATO-GASTROENTEROLOGY ) ( Germany ) 1984 , 31/6 (285-288)

**CODEN: HEGAD**

**Document Type: Journal**

**Language: ENGLISH**

Sensors for quantitative determination of glucose in blood and tissues were developed on the basis of a new concept of potential measurement of glucose. Animal experiments have shown that continuous recording of glucose levels in blood and tissue by means of our new glucose sensor is highly accurate and reveals excellent long-term stability. Our initial experimental results indicate that a glucose concentration gradient may exist between blood and tissue. Wolfson et al. determined glucose concentrations in the subcutaneous extracellular space, peritoneum, pleura and pericardium by means of modified 'Guyton capsules', dialysis bags and millipore-membrane-covered devices. At blood glucose levels of 104-109 mg/dl they found tissue values of between 49 and 76 mg/dl. Recently Fischer et al. measured subcutaneous glucose concentrations by means of a short-term implanted enzyme sensor. They reported an average interstitial level of 50% of the plasma concentration. These observations raise the interesting question: In what tissue should the sensor be placed in order to obtain representative information on the homeostasis of the cellular glucose supply? The development of tissue sensors offers several advantages. It is possible to use large electrodes, which have a higher long-term stability. The use of small catheter electrodes placed in the blood, can be avoided, thus greatly lowering the risk of infections and thromboses. We have used such electrodes with large anodes continuously over a period of 3 months, and found that they showed no disturbances or changes in sensitivity. In view of the high stability of this glucose sensor it would seem realistic to develop an implantable device for long-term measurements in diabetics.

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014900635/7-Links

Fulltext available through: SCIENCEDIRECT

Biosis Previews(R)

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0014900635 Biosis No.: 200400271392

Catheter system

**Author:** Carroll Sean (Reprint); Klein George; Abboud Marwan; Arless Steven G; Milder Fredric L; Wittenberger Dan

**Author Address:** Rancho Cucamonga, CA, USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1282 ( 1 ): May 4, 2004 2004

**Medium:** e-file

**ISSN:** 0098-1133 (ISSN print)

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** A cryocatheter for treatment of tissue has a tip adapted to provide a signal indicative of the quality and/or orientation of the tip contact with surrounding tissue. In one embodiment, a signal conductor extends through the catheter to the tip and connects to a thermally and electrically conductive shell or cap that applies an RF current to the region of tissue contacted by the tip. The tissue impedance path between the signal lead and a surface electrode mounted on the patient's skin is monitored to develop a quantitative measure of tissue contact at the distal tip, which is preferably displayed on the screen of a catheter monitoring console. In yet a further embodiment, the catheter is provided with a split tip having temperature monitoring sensors, such as thermistors, mounted on opposed halves of the tip so as to sense temperature on two sides of the catheter axis. The thermistor signals are processed to determine and display differential temperature between the two sides of the tip, thus revealing which side lies in contact. In yet a further aspect of the first embodiment, two separate and distinct high frequency electrical signals are applied to the two halves of a split metal shell or cap at the tip. Signals received at the surface electrode are filtered into first and second frequency components, and these are processed to determine the relative magnitude of the signal or the impedance of the path for each of the injected signals to determine and display the tissue contact orientation of the catheter. The catheter preferably has two separate cooling chambers within the cooling tip, positioned with one chamber on each side of the axis, and a separate cooling inlet to each chamber is switched on by a valve which directs the flow of coolant to the contact side during active cryotreatment. In another embodiment, the cap provides an RF electrode that may be opposed to the cooling side so that either the cryogenic or the RF ablation side may be rotated into contact to selectively heat or cool, or in representative protocol treat, then thaw, the same tissue site.

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0014055870/7 Links

Fulltext available through: SCIENCEDIRECT

Biosis Previews(R)

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0014055870 Biosis No.: 200300014589

**Catheter and system for monitoring tissue contact**

**Author:** Carroll Sean (Reprint); Klein George

**Author Address:** Beaconsfield, Canada\*\*Canada

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1263 ( 5 ): Oct. 29, 2002 2002

**Medium:** e-file

**ISSN:** 0098-1133 (ISSN print)

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** A cryocatheter for treatment of tissue has a tip adapted to provide a signal indicative of the quality and/or orientation of the tip contact with surrounding tissue. In one embodiment, a signal conductor extends through the catheter to the tip and connects to a thermally and electrically conductive shell or cap that applies an RF current to the region of tissue contacted by the tip. The tissue impedance path between the signal lead and a surface electrode mounted on the patient's skin is monitored to develop a quantitative measure of tissue contact at the distal tip, which is preferably displayed on the screen of a catheter monitoring console. In yet a further embodiment, the catheter is provided with a split tip having temperature monitoring sensors, such as thermistors, mounted on opposed halves of the tip so as to sense temperature on two sides of the catheter axis. The thermistor signals are processed to determine and display differential temperature between the two sides of the tip, thus revealing which side lies in contact. In yet a further aspect of the first embodiment, two separate and distinct high frequency electrical signals are applied to the two halves of a split metal shell or cap at the tip. Signals received at the surface electrode are filtered into first and second frequency components, and these are processed to determine the relative magnitude of the signal or the impedance of the path for each of the injected signals to determine and display the tissue contact orientation of the catheter. The catheter preferably has two separate cooling chambers within the cooling tip, positioned with one chamber on each side of the axis, and a separate cooling inlet to each chamber is switched on by a valve which directs the flow of coolant to the contact side during active cryotreatment. In another embodiment, the cap provides an RF electrode that may be opposed to the cooling side so that either the cryogenic or the RF ablation side may be rotated into contact to selectively heat or cool, or in representative protocol treat, then thaw, the same tissue site.

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0013214833/7 Links

Fulltext available through: SCIENCEDIRECT

Biosis Previews(R)

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0013214833 Biosis No.: 200100386672

**Apparatus and process for catheter ablation**

**Author:** Muntermann Axel (Reprint)

**Author Address:** Gottenweg 51, D-35578 Wetzlar, Germany\*\*Germany

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1244 ( 1 ): Mar. 6, 2001 2001

**Medium:** e-file

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** An apparatus and a process for catheter ablation, with an ablation catheter and, associated with this, a connection to a high frequency generator, to a controlled or to a regulated high frequency ablation equipment, wherein the catheter has at least one electrode for the ablation of tissue by irradiation of ablating power, preferably of high frequency power and preferably at least one temperature sensor associated with this electrode for the determination of the temperature of the electrode; the energy delivery to the tissue to be ablated is controlled or regulated such that a predetermined coagulation temperature is reached within the concerned tissue region, and a device is provided for the sensing of a parameter which is related to the temperature difference between the temperature measured at the electrode and the temperature in the tissue in the neighborhood of the electrode.



25/7/1 (Item 1 from file: 155) [Links](#)

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13206350 PMID: 11339998

**Simultaneous measurement of cellular respiration and acidification with a single CMOS ISFET.**

Lehmann M; Baumann W; Brischwein M; Gahle H; Freund I; Ehret R; Drechsler S ; Palzer H; Kleintges M; Sieben U; Wolf B

Micronas GmbH, Hans-Bunte-Str. 19, 79108, Freiburg, Germany. lehmann@micronas.com

Biosensors & bioelectronics ( England ) May 2001 , 16 (3) p195-203 , ISSN: 0956-5663--Print Journal Code: 9001289

Publishing Model Print

**Document type:** Journal Article

**Languages:** ENGLISH

**Main Citation Owner:** NLM

**Record type:** MEDLINE; Completed

In vivo, the pH value and oxygen partial pressure are the most important physico-chemical parameters in the microenvironment of human tissues. In vitro, the extracellular acidification rate of cell cultures is an indicator of global cellular metabolism, while the rate of oxygen consumption is a measure of mitochondrial activity. Earlier approaches had the disadvantage that these two values had to be measured with two separate sensors at different loci within the tissue or cell culture. Furthermore, conventional Clark-type oxygen sensors are not very compatible for miniaturisation, making it impossible to measure at small cell volumes or even at the single cell level. We have, therefore, developed an ISFET based sensor structure which is able to **measure both pH and oxygen partial pressure**. This sensor structure was tested in vitro for simultaneous records of cellular acidification and respiration rates at the same site within the cell culture. This sensor is manufactured by a CMOS-process.

**Record Date Created:** 20010507

**Record Date Completed:** 20010920

25/7/5 (Item 2 from file: 5) [Links](#)

Fulltext available through: [SCIENCEDIRECT](#)

Biosis Previews(R)

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0013398900 Biosis No.: 200100570739

**Intracardiac drug delivery**

**Author:** Haim Shlomo Ben (Reprint); Yaron Uri; Matcovitch Avraham

**Author Address:** Haifa, Israel\*\*Israel

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1251 ( 5 ): Oct. 30, 2001 2001

**Medium:** e-file

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** Apparatus for intracardiac drug administration, including a catheter which is inserted into a chamber of

the heart and brought into engagement with a site in the heart wall. The catheter includes at least one position sensor, which generates signals responsive to the position of the catheter **within the heart**, and a drug delivery device, which administers a desired dose of a therapeutic drug at the site determined responsive to the signals from the position sensor.

25/7/10 (Item 2 from file: 2) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#) [SCIENCEDIRECT](#)  
INSPEC

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01983720 INSPEC Abstract Number: B76049378

**Title:** A wound-measuring unit for locating traces of plutonium in wounds

**Author** Fromhein, O.; Ohlenschlager, L.; Rapp, W.

**Author Affiliation:** Gesellschaft fur Kernforschung mbH, Karlsruhe, West Germany

**Journal:** Biomedizinische Technik vol.21, suppl. p. 37-8

**Publication Date:** June 1976 **Country of Publication:** West Germany

**CODEN:** BMZTA7 **ISSN:** 0013-5585

**Conference Title:** Medex 76

**Conference Sponsor:** German Soc. Biomedical Engng.; et al

**Conference Date:** 15-18 June 1976 **Conference Location:** Basel, Switzerland

**Language:** German **Document Type:** Conference Paper (PA); Journal Paper (JP)

**Treatment:** Practical (P)

**Abstract:** The instrumental facility described was developed for the detection and location of radioactive contaminating particles on and **within wound tissues**. Four detecting and recording facilities are available: a hand counter **tube** for alpha - and beta -pulse **detection**; spectrometry with **three different detectors** ; an X-Y plotter or printer for measured spectra; and activity determination by multichannel analyzer. ( 2 Refs)

**Subfile:** A B

25/7/11 (Item 3 from file: 2) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#) [SCIENCEDIRECT](#)  
INSPEC

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01420975 INSPEC Abstract Number: A72055252, B72029739

**Title:** Development of miniaturized solid state detectors for the measurement of beta and gamma radiation in **superficial and deep parts of living tissue**

**Author** Lauber, A.

**Author Affiliation:** AB Atomenergi, Studsvik, Sweden

**Journal:** Nuclear Instruments and Methods vol.101, no.3 p. 545-50

**Publication Date:** 15 June 1972 **Country of Publication:** Netherlands

**CODEN:** NUIMAL **ISSN:** 0029-554X

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Practical (P)

**Abstract:** The construction of two types of miniaturized probes for in-vivo measurement of beta and gamma radiation is described. The probes use cylindrical lithium compensated silicon detectors as sensing elements. The first type is intended for relatively superficial measurements. It consists of a stainless steel tube 50-100 mm long attached to a cylindrical holder. The steel tube contains one or several detectors, fixed or movable inside the tube. Depending on the size of the sensing elements the outer diameter of the steel tube can be chosen in the interval 1.1 to 4.5 mm. Tube wall thickness is normally 50  $\mu$ m but can be reduced to 15  $\mu$ m if required (measurements of low-energetic beta radiation). The second type makes it possible to measure deep inside living tissue. It consists of a detector element similar to those described above but contained in a steel tube 13 mm long and attached to a 50-100 cm long, easily flexible coaxial cable. The outer diameter of the structure is of the order of 1.2-1.5 mm. ( 12 Refs)

**Subfile:** A B

25/7/12 (Item 1 from file: 8) [Links](#)

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Ei Compendex(R)

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05918458 E.I. Monthly No: EIM9006-024926

**Title:** Use of effective conductivity for hyperthermia treatment planning.

**Author:** Bowman, H. F.; Curley, M. G.; Newman, W. H.; Summit, S. C.; Chang, S.; Hansen, J.; Herman, T. S.; Svensson, G. K.

**Corporate Source:** Massachusetts Inst of Technology, Cambridge, MA, USA

**Conference Title:** Bioheat Transfer - Applications in Hyperthermia, Emerging Horizons in Instrumentation and Modeling: Presented at the Winter Annual Meeting of the ASME

**Conference Location:** San Francisco, CA, USA **Conference Date:** 19891210

**Sponsor:** ASME, Heat Transfer Div, New York, NY, USA; ASME, Bioengineering Div, New York, NY, USA

**E.I. Conference No.:** 12998

**Source:** American Society of Mechanical Engineers, Heat Transfer Division, (Publication) HTD v 126. Publ by American Soc of Mechanical Engineers (ASME), New York, NY, USA. p 23-27

**Publication Year:** 1989

**CODEN:** ASMHD8 **ISSN:** 0272-5673

**Language:** English

**Document Type:** PA; (Conference Paper) **Treatment:** T; (Theoretical); X; (Experimental)

**Journal Announcement:** 9006

**Abstract:** Effective hyperthermia therapy requires that the temperature of the entire tumor volume reach therapeutic levels. This requires local SAR to be sufficiently large to compensate for the combined thermal dissipation due to conduction and perfusion. The MIT/Harvard/Joint Center for Radiation Therapy/Northeastern University consortium has initiated a program to quantify the effective thermal conductivity prior to treatment so as to estimate the required local distribution of SAR. A rational data base is sought to relate the measured local SAR of specific applicators to thermal dissipation, tumor depth, and tumor volume. Such data is fit to a quantitative model for treatment temperature as a function of SAR and effective thermal conductivity. Conductivity probes are placed using a hollow 18 gauge blunt-tipped needle system under X-ray guidance. Multiple sensors and/or pullback techniques measure the spatial variation in effective thermal conductivity. Initial experiments with a perfused dog kidney model show that a relationship exists between SAR, tissue effective thermal conductivity, and the resulting steady-state tissue temperature rise. These measurements, when combined with the SAR capabilities of the available heating devices, allow the choice of heating modality and applicator, and indicate the likelihood of achieving therapeutic levels

without unacceptable heating of adjacent tissue. (Edited author abstract) 12 Refs.

25/7/13 (Item 2 from file: 8) [Links](#)

Fulltext available through: [USPTO Full Text Retrieval Options](#) [SCIENCEDIRECT](#)

Ei Compendex(R)

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04886208 E.I. Monthly No: EIM8508-047193

**Title:** NEW METHOD MEASURING CONSISTENCE OF LIVING TISSUE APPLIED ON DELIVERY UTERINE CERVIX.

**Author:** Tsukahara, Susumu; Sato, Kouichi; Katahira, Kiyoaki

**Corporate Source:** Fukushima Medical Coll, Dep of Physiology, Fukushima, Jpn

**Conference Title:** Proceedings of the 23rd Conference - Japan Society of Medical Electronics & Biological Engineering.

**Conference Location:** Tokyo, Jpn **Conference Date:** 19840429

**Sponsor:** Japan Soc of Medical Electronics & Biological Engineering, Tokyo, Jpn

**E.I. Conference No.:** 05848

**Source:** Iyo Denshi To Seitai Kogaku/Japanese Journal of Medical Electronics and Biological Engineering v 22 Apr 1984. Publ by Japan Soc of Medical Electronics & Biological Engineering, Tokyo, Jpn p 482-483

**Publication Year:** 1984

**CODEN:** IYSEAK **ISSN:** 0021-3292

**Language:** Japanese

**Document Type:** PA; (Conference Paper)

**Journal Announcement:** 8508

**Abstract:** Living tissue deforms its shape corresponding to the external force. One can feel the consistence or stiffness by the deformation rate, pressing with fingers onto the tissue or organ. In this report the authors designed a finger-like measuring device and tried to apply it to clinical examination. The device constructed with a **detector tube** (acril, 20cm in length and 7mm in diameter) and suction pump. One end of the **detector tube** connected to a suction pump, the other end was attached to the object (uterine cervix in this report). Negative pressure of the tube made a small dome of tissue inside the edge of the tube. The **detector tube** had two sensors. Output voltages of these sensors were recorded as X-Y curves. These curves represent the relation between force and displacement. The consistency of the uterine cervix during delivery was measured. The angle of inclination of the force/displacement curve increased as birth approached and rapidly decreased after birth. In Japanese with English abstract.

25/7/14 (Item 1 from file: 23) [Links](#)

CSA Technology Research Database

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0002642590 IP Accession No: 0886026

**Novel optical fiber techniques for medical applications.**

Tel Aviv Univ., Israel

**Addl. Source Info:** SPIE, P.O. BOX 10, BELLINGHAM, WA 98227-0010, USA , 1984, vol. 494, 89 pp

**Publication Date:** 1984

**Publisher:** SPIE, P.O. BOX 10, BELLINGHAM, WA 98227-0010, USA

**Conference:**

SPIE Conf. Novel Opt. Fiber Techniques Med. Applic., San Diego, CA (USA), 21 Aug 1984

**Record Type:** Abstract

**Language:** English

**ISBN:** 0-89252-529-0

**Notes:** LC No. 84-072582.

**File Segment:** Electronics & Communications Abstracts

**Abstract:**

There seems to be a new surge of interest in the use of **optical fibers** for medical applications. **Three** areas of particular interest were discussed in the conference: a) Medical Diagnostics-Optical fibers may be used for performing physical and chemical measurements inside the body (e.g., sensors for temperature, pressure, blood flow, pH, blood gases and even glucose have already been developed). b) Endoscopy-ultrathin fiberscopes make it possible to obtain visual images of areas in the body which were inaccessible in the past (e.g., inside coronary arteries). c) Power Transmission-**optical fibers** can now be inserted through **catheters**, and laser beams sent through the fibers may then be used for removing **tissues** inside the body (e.g., plaque, tumors etc.). Some major surgical operations, such as "by-pass" heart operations, may be replaced by simpler procedures.

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30/7/21 (Item 2 from file: 5) [Links](#)

Fulltext available through: [SCIENCEDIRECT](#)

Biosis Previews(R)

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0014017736 Biosis No.: 200200611247

**Systems for guiding a medical instrument through a body**

**Author:** Winston Thomas R; Neet John M

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1263 ( 2 ): Oct. 8, 2002 2002

**Medium:** e-file

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** Guidance systems for guiding a catheter through tissue within a body are described. In one form, the system is implemented in connection with a catheter which includes a catheter body having a optic fibers extending between a first end and a second end thereof. The guidance system is coupled to the catheter body and includes a first optic fiber, a second optic fiber, and a detecting element. The first optic fiber includes a first end and a second end, and is coupled to the catheter body so that the first optic fiber second end is adjacent the catheter second end. The second optic fiber also includes a first end and a second end, and a reference mirror is positioned adjacent the second optic fiber second end. The first optic fiber first end is communicatively coupled to the **detecting** element and the **second** optic fiber first end is communicatively coupled to the detecting element. The detecting element is configured to determine interference between a light beam propagating through the first optic fiber and a light beam propagating through the second optic fiber.

30/7/23 (Item 4 from file: 5) [Links](#)

Fulltext available through: [SCIENCEDIRECT](#)

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0013005319 Biosis No.: 200100177158

**Method and system for using multiple intravascular sensing devices to detect electrical activity**

**Author:** Littmann Laszlo (Reprint); Dickens Duane

**Author Address:** Charlotte, NC, USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1236 ( 2 ): July 11, 2000 2000

**Medium:** e-file

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** A method and system for detecting electrical activity within a patient's heart, particularly the electrical activity which causes arrhythmia, which includes a first intravascular device such as a catheter or guidewire having a **plurality** of **sensing** electrodes on a distal portion thereof which is disposed within one location of the patient's

coronary vasculature and a second intravascular device such as a **catheter** or guidewire having a **plurality** of **sensing** electrodes on a distal portion thereof which is disposed within a second location of the patient's coronary vasculature to facilitate mapping the electrical activity of the patient's heart. Once the electrical activity has been mapped, therapeutic procedures can be initiated.

30/7/24 (Item 5 from file: 5) [Links](#)

Fulltext available through: [SCIENCEDIRECT](#)

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0012801187 **Biosis No.:** 200000519500

**Systems and methods for guiding a medical instrument through a body**

**Author:** Winston Thomas R; Neet John M

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1234 ( 3 ): May 16, 2000 2000

**Medium:** e-file

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** Guidance systems for guiding a catheter through tissue within a body are described. In one form, the system is implemented in connection with a catheter which includes a catheter body having a optic fibers extending between a first end and a second end thereof. The guidance system is coupled to the catheter body and includes a first optic fiber, a second optic fiber, and a detecting element. The first optic fiber includes a first end and a second end, and is coupled to the catheter body so that the first optic fiber second end is adjacent the catheter second end. The second optic fiber also includes a first end and a second end, and a reference mirror is positioned adjacent the second optic fiber second end. The first optic fiber first end is communicatively coupled to the **detecting** element and the **second** optic fiber first end is communicatively coupled to the detecting element. The detecting element is configured to determine interference between a light beam propagating through the first optic fiber and a light beam propagating through the second optic fiber.

30/7/25 (Item 6 from file: 5) [Links](#)

Fulltext available through: [SCIENCEDIRECT](#)

Biosis Previews(R)

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0012703719 **Biosis No.:** 200000422032

**Device for the transvenous cardioversion of atrial fibrillation or atrial flutter**

**Author:** Michel Ulrich (Reprint)

**Author Address:** Kaiserslautern, Germany\*\*Germany

**Journal:** Official Gazette of the United States Patent and Trademark Office Patents 1232 ( 3 ): Mar. 21, 2000 2000

**Medium:** e-file

ISSN: 0098-1133

Document Type: Patent

Record Type: Abstract

Language: English

**Abstract:** A transvenous catheter for the cardioversion of atrial fibrillation or atrial flutter and/or the stimulation of the heart's activity. The catheter has an electrically active section within a heart and an electrically passive section carrying electrical cables. At least two defibrillation electrodes are located in the electrically active section and coupled to the electrical cables of the catheter. Additionally, there are **at least one sensing ring electrode** positioned between the at least two defibrillation electrodes and coupled to the electrical cables.

30/7/27 (Item 1 from file: 6) [Links](#)

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NTIS

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HRP-0005947/7/XAB

**Britons Develop Non-Invasive Diagnostic System**

1972 2p

Document Type: Journal article

**Journal Announcement:** GRAI7623

Pub. in Jnl. of the American Medical Association v223 n1 p7-8 Jan 73.

**NTIS Prices:** Not available NTIS

Routine diagnostic use of a recently - developed, computerized, axial tomography scanning unit in a suburban London, England hospital is discussed in this article. The scanning unit is being evaluated at the hospital while engineers complete refinements on a computer that will be 'mated' with it. The equipment employs a narrow beam of roentgen rays to scan the patient's head (encased in a rubber cap in the scanner unit) in 'slices' 0.8 cm to 1.3 cm thick. These rays pass through the skull to **two sensing devices** which remain in constant alignment on the opposite side. The scanning unit is rotated around the head, stopping for 180 scans at one - degree intervals, with each detector taking a total of 28,000 readings per scan. The readings are stored on a magnetic disk, from which the computer calculates absorption values. The computer then produces a picture made up of 6,400 matrix points, discriminating **between tissues** of minutely varying (as little as 0.5 percent) density. Radiologists can distinguish tumors, cysts, or hemorrhages on these pictures. The computer's picture can be produced on a cathode ray tube viewing unit for direct examination or it can be recorded photographically.

30/7/28 (Item 1 from file: 8) [Links](#)

Ei Compendex(R)

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07682436 E.I. No: EIP97013491932

**Title:** Laser Doppler velocimeter miniature differential probe for biomedical applications

**Author:** Khotiaintsev, Konstantin S.; Svirid, V.; Glebova, L.

**Corporate Source:** Inst. de Fisiologie/Benemerita Univ. Autonoma de Puebla, Puebla, PUE, Mex



**Conference Title:** Biomedical Systems and Technologies

**Conference Location:** Vienna, Austria **Conference Date:** 19960907

**Sponsor:** SPIE - Int Soc for Opt Engineering, Bellingham, WA USA

**E.I. Conference No.:** 22810

**Source:** Proceedings of SPIE - The International Society for Optical Engineering v 2928 1996. p 158-164

**Publication Year:** 1996

**CODEN:** PSISDG **ISBN:** 0-8194-2330-0

**Language:** English

**Document Type:** JA; (Journal Article) **Treatment:** X; (Experimental)

**Journal Announcement:** 9706W3

**Abstract:** The dynamic sensors for speed and flow are applied in pathological physiological research of the cardiovascular system and for the study of blood flow in the capillaries. The use of laser Doppler anemometry (LDA) method is considered the major prospective for this application. This method is based on the Doppler shift of the frequency of laser radiation scattered by blood particles in movement. However, to have access to **inner organs**, a small-size delivery system and optical probe are necessary. In this paper, we report a novel miniature optical probe for the differential-type LDA, suitable for use in small blood vessels and in other small channels. For the construction of the probe, **two-core single mode optical fiber** was used. This fiber had two anisotropic 8  $\mu$  cores, located symmetrically with respect to the fiber axis. The separation between them was 25  $\mu$ . In the fiber, a directional coupler was integrated near the fiber's remote end. The coupler was fabricated by heating of a small section of the fiber, with simultaneous elongation of this section. For heating, the carbon-dioxide laser was utilized. The carbon-dioxide laser was also used to fabricate a lens at the fiber tip. At the fiber entrance, the laser light was launched in one of the fiber's cores. The fiber was typically of several meters long. Near the fiber end, this radiation was split by the directional coupler, and the second core was excited too. At the fiber tip, the fused lens provided collimation of the emerging beams and secured their intersection in front of the fiber tip. In this intersection volume, the interference field was formed. In the flow, this periodic pattern resulted in Doppler frequency shift of the light scattered by moving particles. This probe was successfully used together with the LDA signal processing equipment for velocity measurement in small **tubes** for blood-flow simulation experiments. In the probe, the two cores are identical, and the distance between the directional coupler and the fiber tip is very small. Thereafter, all extrinsic fields and effects have identical influence on the propagation constant of each core. Hence, the resultant parasitic phase modulation, that is the main problem in the fiber-based differential LDA, is negligible in this probe. This is the principal advantage of this probe. However, its small size and integrated nature are also of value for biomedical applications. 22 Refs.

37/7/8 (Item 3 from file: 2) [Links](#)

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INSPEC

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05738511 INSPEC Abstract Number: A9419-0720F-001, B9410-7230E-004

**Title:** Temperature gradient-type calorimeter using optical fiber coupler

**Author** Kimura, T.; Takashima, M.; Sakaguchi, H.; Noda, K.-I.

**Author Affiliation:** Fac. of Technol., Tokyo Univ. of Agric. & Technol., Japan

**Journal:** Electronics and Communications in Japan, Part 2 (Electronics) vol.76, no.11 p. 25-33

**Publication Date:** Nov. 1993 **Country of Publication:** USA

**CODEN:** ECJEEJ **ISSN:** 8756-663X

**U.S. Copyright Clearance Center Code:** 8756-663X/93/0011-0025

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Practical (P); Experimental (X)

**Abstract:** A temperature gradient-type calorimeter is proposed which can easily measure an infinitesimal amount of calories. Two arms of an optical Michelson interferometer are used as a set of sensing fibers. The temperature gradient between the internal wall and the external wall of a sample vessel is measured directly and the environmental temperature disturbance is cancelled. Specifically, a Michelson interferometer is formed with optical fiber couplers and the two arms (viz. the sensing arm and the reference arm) of the optical fiber coupler are wound around the internal and external walls of a sample vessel. From the phase difference of the output signals of this interferometer, the temperature gradient between the two walls is derived directly so that the amount of heat flowing out of the vessel is measured. In this paper, the theoretical analysis and the experimental results are presented. For the applied heat of 0.686 mcal/s, the theoretical value agreed almost with the measured value. To reduce the phase difference error for the frequency variation of the optical source in the optical Michelson interferometer, the low coherence nature of the multimode laser diode is used and the optical path length difference between the two arms of the optical fiber coupler used in the present experiment is measured at a high resolution. Subsequently, the end of the arms is cut and the two arm lengths are equalized. As a result, the phase error for the light source with a frequency variation rate of  $10/\text{sup } -5/$  is kept at less than 0.0546 rad (corresponding to 4.92  $\mu\text{cal/s}$ ). ( 10 Refs)

**Subfile:** A B

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42/7/1 (Item 1 from file: 155) [Links](#)

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12861474 **PMID:** 10986755

**Multiparameter brain tissue monitoring--correlation between parameters and identification of CPP thresholds.**

al-Rawi P G; Hutchinson P J; Gupta A K; Piechnik S K; Pickard J D; Kirkpatrick P J

University Department of Neurosurgery, Addenbrooke's Hospital, Cambridge, UK. pga20@medschl.cam.ac.uk

Zentralblatt fur Neurochirurgie ( GERMANY ) 2000 , 61 (2) p74-9 , ISSN: 0044-4251--Print **Journal Code:**  
0413646

Publishing Model Print

**Document type:** Journal Article

**Languages:** ENGLISH

**Main Citation Owner:** NLM

**Record type:** MEDLINE; Completed

Continuous monitoring of brain interstitial gas concentrations allows direct regional evaluation of the pathophysiology of cerebral tissues. We have incorporated the Paratrend 7 (P7) multiparameter sensor into our established multimodal monitoring of head injured patients, to investigate the relationship between brain and arterial pO<sub>2</sub>, pCO<sub>2</sub>, and pH, as well as defining thresholds for cerebral perfusion pressure (CPP). A P7 sensor was inserted into the brain tissue of 40 adult head injured patients via a modified Camino bolt or triple lumen bolt. A second sensor was placed in the femoral artery for continuous monitoring of blood gases. Data signals from 19 monitored parameters were collected onto computer at the bedside for up to 14 days. No complications were seen. For individual patients the changes in brain tissue parameters showed large variations over 24 hours and the relationship between parameters varied considerably both between patients and during the period of monitoring any one individual. Changes related to periods of arterial desaturation, cerebral hypoperfusion and therapeutic manoeuvres could be seen. Good correlation was seen between brain pCO<sub>2</sub> and arterial pCO<sub>2</sub> (r = 0.58). Poor correlation was seen between CPP and brain pO<sub>2</sub>, and between brain pO<sub>2</sub> and ICP. However, by grouping values for intracranial pressure (ICP) and CPP, thresholds for brain tissue pO<sub>2</sub> were identified in 16 patients where CPP fell below 60 mmHg. No patients where CPP was always > 60 mmHg showed a significant threshold for a drop in brain pO<sub>2</sub> (n = 16). In conclusion, the P7 shows potential as a monitor of regional brain oxygenation and for detection of potentially damaging secondary insults. The results must be interpreted whilst considering catheter position, autoregulation and systemic arterial changes for each individual.

**Record Date Created:** 20001010

**Record Date Completed:** 20001010

42/7/2 (Item 1 from file: 35) [Links](#)

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1080898 ORDER NO: AAD89-25063

**GLUCOSE AND OXYGEN SENSORS IMPLANTED IN THE SUBCUTANEOUS TISSUE:  
EXPERIMENTAL AND THEORETICAL STUDIES**

**Author:** ERTEFAI, SIMA

**Degree:** PH.D.

Year: 1989

Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, SAN DIEGO ( 0033 )

CHAIRPERSON: DAVID A. GOUGH

Source: Volume 5007B of Dissertations Abstracts International.

PAGE 3002 . 114 PAGES

There is a widely recognized need for an implantable glucose sensor that can provide information for improved management of metabolic imbalances in diabetes. **Several** glucose **sensors** based on different design principles are being developed, but the oxygen sensor-based enzyme electrode appears most promising for long-term implantation. This sensor has operated as a stable intravascular implant for over a month. However, there exist certain practical advantages of subcutaneous implantation. This study deals with chronic operation of the glucose sensor in subcutaneous tissue.

A rat skin fold preparation for chronic testing of glucose and oxygen sensors implanted in the subcutaneous tissue is described. Experimental observations of the signal of the implanted sensors are presented. The effects of blood glucose excursions and changes in microvascular **perfusion** on **sensor** response are explored over a ten-day implantation period. Histological analysis of the surrounding **tissues within** 500  $\mu\text{m}$  of the sensors is also discussed, including measurements of capillary surface area density and void fraction.

A steady-state mass transport model describing the glucose concentration profile near the sensor is proposed and used to interpret experimental results. With this model the sensitivity of the system to different magnitudes of capillary permeability, metabolic rate, diffusion coefficient, blood flow rate, capillary surface area, and sensor characteristics is estimated. Results suggest that the concentration at the tissue-sensor interface is largely affected by the capillary permeability and surface-area density in the tissue, the consumption of glucose by the enzyme gel in the sensor, and the diffusion coefficient for glucose in the tissue. Recommendations are made for glucose sensor design, calibration, and operation in subcutaneous tissue.

?

Set	Items	Description
S1	2531248	S SENSOR OR SENSORS OR SENSE? ? OR SENSING? OR DETECT? OR FIBEROPTIC? OR OPTICAL(3N)(FIBER? ? OR FIBRE? ?)
S2	32176	S S1(3N)(MULTIPL? OR PLURAL? OR SEVERAL OR FEW OR (MORE())THAN OR AT()LEAST)()(ONE OR 1))
S3	57869	S S1(3N)(THREE OR THIRD OR TWO OR SECOND OR COUPLE OR PAIR)
S4	93279	S (PHYSIOLOG? OR BIOLOGY OR BIOLOGICAL)(2N)(PROPERTY? OR PROPERTIES OR DATA OR DATUM OR INFORMATION?) OR (OXYGEN OR O2)(2N)SATURAT? OR BLOOD(2N)(OXYGEN OR O2 OR SUGAR OR GLUCOSE) OR (NADH OR NAD OR NADP OR NICOTINAMIDE()ADENINE()DINUCLEOTIDE OR DRUG? ? OR PHARMACEUTIC? OR PROTHROMBIN)(2N)(LEVEL? ? OR CONCENTRAT?)
S5	3852889	S OXYGENAT? OR TEMPERATURE? OR COLOR? ? OR COLOUR? OR PRESSURE? ? OR PERFUS? OR PH OR TURGITIT?
S6	772940	S DRAIN? OR TUBE? ? OR TUBING? OR TUBUL? OR CATHETER? OR CANNULA? OR CONDUIT? ?
S7	424313	S ORGAN? ? OR TISSUE? ?
S8	1423122	S LIVER OR KIDNEY OR HEART OR LUNG OR LUNGS OR WOUND? ? OR STOMACH
S9	92762	S S4:S5(3N)(S MONITOR??? OR ASSESS??? OR EVALUAT? OR MEASURE? OR MEASURING OR DETERMIN?)
S10	7973	S S1(5N)S6
S11	41699	S S7:S8 (3N)(BETWEEN OR WITHIN OR INSIDE OR PROXIMAT? OR INNER OR INNERMOST OR INTERIOR? OR INTERNAL?)
S12	0	S S2:S3(S)S9(S)S10(S)S11
S13	26	S S2:S3(S)S9(S)S10
S14	2	S S2:S3(S)S10(S)S11
S15	1	S S13:S14/2004:2005
S16	0	S S13:S14/2006:2007
S17	27	S S13:S14 NOT S15:S16
S18	24	RD (unique items)
S19	54912	S S1(3N)S4:S5
S20	7	S S2:S3(S)S19(S)S11
S21	7	S S20 NOT S13
S22	5	RD (unique items)
S23	10423	S S1(3N)S6:S7
S24	13	S S23(S)S2:S3(S)S11
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S26	10	S S23 NOT (S13 OR S21 OR S24:S25)

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*\*File 624: Homeland Security & Defense and 9 Platt energy journals added Please see HELP NEWS624 for more*

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18/3,K/2 (Item 2 from file: 9) [Links](#)

Business & Industry(R)

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01192188 Supplier Number: 23723220 (USE FORMAT 7 OR 9 FOR FULLTEXT)

**Micro-sensor measures help adjust respirators**

**( Three German companies and University of Duisburg are developing micro-sensor system for measuring breathing during artificial respiration )**

Medical Device Business News , n 10 , p 15

December 1996

**Document Type:** Newsletter ISSN: 1363-1039 ( United Kingdom )

**Language:** English **Record Type:** Fulltext

**Word Count:** 176

**TEXT:**

...are developing a micro-sensor system for measuring breathing during artificial respiration.

The system, presented in November at the Medica exhibition in Duesseldorf, consists of **three fibre-optical sensors** inside a windpipe tube that **measures pressure, temperature** and respiratory flow at three different spots inside the lungs. Since the laser technology keeps the parts of the sensor at sizes less than a...

18/3,K/7 (Item 5 from file: 16) Links

Gale Group PROMT(R)

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01583350 Supplier Number: 41944911 (USE FORMAT 7 FOR FULLTEXT)

**ICU Developments and Sensor-based Monitors in Europe: Pacemaker Control Sensors**

The BBI Newsletter , v 14 , n 3 , p N/A

March 20 , 1991

Language: English Record Type: Fulltext

Document Type: Newsletter ; Trade

Word Count: 124

(USE FORMAT 7 FOR FULLTEXT)

**Text:**

Hemoglobin-oxygen saturation measurements can be made using a reflectometric sensor. Prototypes of a catheter with the oxygen saturation sensor have been manufactured by SIEMENS (Erlangen, D). The sensor is mounted on the side of a cardiac pacemaker catheter, placing the sensor in the right ventricle to control the frequency of the pacemaker so that mixed venous oxygen saturation is optimally maintained at about 70%. Pacemaker outputs are also frequently controlled by the use of automatic threshold sensing and automatic pulse generators. The Cosmos II pacemaker from INTERMEDICS (Freeport, TX) has two sensing circuits set at different levels while in the Chorus pacemaker from ELA MEDICAL (Montrouge, F), automatic reprogramming of the post ventricular atrial refractory period is ...



18/3,K/15 (Item 1 from file: 149) Links

TGG Health&Wellness DB(SM)

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02943049 **Supplier Number:** 104032669 (USE FORMAT 7 OR 9 FOR FULL TEXT )

**A new method to record subglottal pressure waves: potential applications.**

Neumann, Katrin; Gall, Volker; Schutte, Harm K.; Miller, Donald G.

Journal of Voice , 17 , 2 , 140(20)

June ,

2003

**Publication Format:** Magazine/Journal

ISSN: 0892-1997

**Language:** English

**Record Type:** Fulltext **Target Audience:** Academic; Professional

**Word Count:** 8470 **Line Count:** 00736

...o:), (u:), sustained with normal loudness at comfortable pitch.

Experimental setup

Figure 1 shows the recording system. For technical details see Table

1.

Direct intratracheal **pressure measurements** were made with the distal **sensor** of a Millar catheter mounted with **two pressure sensors**. Simultaneous recordings were taken with a microphone placed at the jugular fossa. Additionally, audio and electroglottogram (EGG) signals were recorded.

The intratracheal pressure was measured...

18/3,K/18 (Item 4 from file: 149) [Links](#)

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01619386 **Supplier Number:** 18228606 (USE FORMAT 7 OR 9 FOR FULL TEXT )

**Continuous fiberoptic arterial and venous blood gas monitoring in hemorrhagic shock.**

Oropello, John M.; Manasia, Anthony; Hannon, Emily; Leibowitz, Andrew; Benjamin, Ernest  
Chest , v109 , n4 , p1049(7)

April ,  
1996

**Publication Format:** Magazine/Journal

ISSN: 0012-3692

**Language:** English

**Record Type:** Fulltext **Target Audience:** Professional

**Word Count:** 3516 **Line Count:** 00323

...sampling, and the insertion of the system (Puritan-Bennett FOxS PB 3300 System; Puritan-Bennett FOxS Division; Carlsbad, Calif), a fiberoptic, continuous intravascular blood gas **sensor**. The **second** continuous intravascular blood gas sensor was passed into the superior vena cava/right atrial level via a 20-gauge single-lumen catheter inserted via cutdown...

...CIVBGM were taken from this catheter to ensure that the venous blood was sampled from approximately the same site as that measured by the optode **sensor**. A 7F pulmonary artery **catheter** (Baxter Healthcare Corporation; Irvine, Calif) was inserted into the right jugular vein and floated into the pulmonary artery. Blood **pressures** and CO were **measured** on a

18/3,K/19 (Item 5 from file: 149) [Links](#)

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01434396 **Supplier Number:** 14707300 (USE FORMAT 7 OR 9 FOR FULL TEXT )

**Gastric asthma? No change in respiratory impedance during intraesophageal acidification in adult asthmatics.**

Wesseling, Geertjan; Brummer, Robert-Jan; Wouters, Emiel F.M.; Velde, Guul P.M. ten  
Chest , v104 , n6 , p1733(4)

Dec ,  
1993

**Publication Format:** Magazine/Journal

ISSN: 0012-3692

**Language:** English

**Record Type:** Fulltext **Target Audience:** Professional

**Word Count:** 3482 **Line Count:** 00286

...tract was performed, including esophagogastroduodenoscopy, stationary esophageal manometry, and 24-h pH monitoring of the distal esophagus.

Manometry was performed using a three-lumen waterperfused catheter with three sensors spaced 5 cm apart. The catheter was inserted through the nose into the stomach and connected to an external transducer. The lower esophageal sphincter (LES) pressure was measured using a station pull-through technique. Location and length of the LES were recorded and the pressure was determined using the gastric end-expiratory pressure as zero reference. A stationary pressure measurement of the esophageal body was performed with the sensors 3, 8, and 13 cm above the upper margin of the LES after wet (5 ml...

18/3,K/21 (Item 7 from file: 149) [Links](#)

TGG Health&Wellness DB(SM)

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01257120 Supplier Number: 13475030 (USE FORMAT 7 OR 9 FOR FULL TEXT )

**Current and future directions in the technology relating to bedside testing of critically ill patients. (Bedside Diagnostic Testing)**

Misiano, Domenic R.; Meyerhoff, Mark E.; Collison, Michael E.

Chest , v97 , n5 , p204S(11)

May ,

1990

**Publication Format:** Magazine/Journal

ISSN: 0012-3692

**Language:** English

**Record Type:** Fulltext **Target Audience:** Professional

**Word Count:** 7330 **Line Count:** 00811

...available as evidenced by recent evaluation of a prototype device used during cardiac surgery. [97]

The latest chapter in efforts to develop implantable blood gas-sensing catheters involves the use of optical rather than electrochemical sensing technologies. Via the immobilization of appropriate fluorescent indicator reagents at the tips of very narrow (eg...

...s inherent in vivo calibration stability and biocompatibility. The fluorescence-based sensor approach is also sensitive to interference from anesthetic agents, particularly nitrous oxide. All three of the sensors are affected by this gas, whereas halothane has a dramatic effect on the signal originating from the [PCO.sub.2] sensor. One important concern raised...

...strength can affect the equilibrium constants of the dyes used to fabricate the optical pH sensor, and this could seriously compromise the reliability of the pH values measured with such devices. In general, given these types of inherent limitations, it is likely that even when fully developed the in vivo optical pH sensors...

18/3,K/22 (Item 8 from file: 149) [Links](#)

TGG Health&Wellness DB(SM)

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01256767 Supplier Number: 13228582 (USE FORMAT 7 OR 9 FOR FULL TEXT )

**Three mixed venous saturation catheters in patients with circulatory shock and respiratory failure.**

Rouby, Jean-Jacques; Poete, Pascale; Bodin, Liliane; Bourgeois, Jean-luc; Arthaud, Martine; Viars, Pierre  
Chest , v98 , n4 , p954(5)

Oct ,

1990

**Publication Format:** Magazine/Journal

**ISSN:** 0012-3692

**Language:** English

**Record Type:** Fulltext **Target Audience:** Professional

**Word Count:** 3142 **Line Count:** 00274

...2]. Sixteen patients were receiving mechanical ventilation and all required invasive hemodynamic monitoring for diagnosis and therapeutic optimization. All patients had an arterial catheter for measuring blood pressure and a [SvO.sub.2] catheter for measuring cardiac output, and cardiac filling pressures. None of the patients was receiving Intralipid emulsion or propofol infusion...

...in 11, (group 1), an Oximetrix opticath catheter (three-reference wavelengths, one detecting fiberoptic filament) was inserted; in eight (group 2) and Edwards sat-one catheter (two-reference wavelengths; one detecting fiberoptic filament) was inserted; in 12 (group 3), a Spectramed spectracath catheter (two-reference wavelengths, two detecting fiberoptic filaments) was inserted. All units and catheters used in this study were reviewed by their respective manufacturers and confirmed to be in proper working conditions...

22/3,K/1 (Item 1 from file: 9) Links

Business & Industry(R)

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01735596 Supplier Number: 24465757 (USE FORMAT 7 OR 9 FOR FULLTEXT)

New Patents: Multi-Fiber Laser Catheter (Assignee / Angeion Corporation)

( Angeion Corp was granted a patent for a multi-fiber laser catheter )

Medical Laser Insight , v 6 , n 12 , p 7

December 1998

Document Type: Newsletter; News Brief ( United States )

Language: English Record Type: Fulltext

Word Count: 317 (USE FORMAT 7 OR 9 FOR FULLTEXT)

**TEXT:**

...of said catheter; b) a multi-fiber optic cable having a proximal end and a distal end located within said catheter body and having a plurality of individual optical fibers to provide laser energy to the tissue site by a laser source; c) a fixation element, having a proximal end and a distal end and...

...a predetermined depth at said pre-selected tissue site and to fix said distal end of said catheter body to said tissue; and d) a plurality of temperature sensors, fixedly attached at spaced intervals along the length of said fixation element within the tissue to sense the temperature of said tissue at a plurality of tissue depths corresponding to said spaced intervals while said laser catheter is providing laser energy to said preselected tissue site, wherein said plurality of temperature sensors provide temperature readings correlated to the tissue depth at which each temperature sensor is located to create a temperature depth profile of the tissue.

PATENT NUMBER: 5,830,209; Issue Date: 1998 11 03; Inventor(s): Savage, Steven...